



ACS-2120 Box PC User Manual

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Warning!

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications.

It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

Disclaimer

This information in this document is subject to change without notice. In no event shall Apex Technology Inc. be liable for damages of any kind, whether incidental or consequential, arising from either the use or misuse of information in this document or in any related materials.

Packing List

Accessories (as ticked) included in this package are:
☐ AC power cable
☐ Driver & manual CD disc
☐ Other. _____ (please specify)

Safety Precautions

Follow the messages below to avoid your systems from damage:

- ◆ Avoid your system from static electricity on all occasions.
- ◆ Prevent electric shock. Don't touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.
- ◆ Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

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Chapter 1 Getting Started

1.1 Specifications

Specs	ACS-2120
CPU	Intel Atom D525 1.8GHz Processor, FSB 800MHz
System Chipset	Intel ICH8M Chipset
System Memory	1 x 204 Pin SO-DIMM socket, support 800MHz up to 2GB SDRAM, default 2GB
External I/O Port	Rear Side: 4 x USB 2.0 connectors 2 x RJ-45 LAN connectors 1 x DB-9 RS232 (COM 1) 1 x DB-15 VGA 1 x 3-Pin DC terminal block connector 1 x Audio line out Front Side: 1 x RS-232 (COM2) 1 x RS-232/422/485 default RS-485 (COM3) 1 x Power switch
Expansion Slots	None
Storage	1 x 2.5" SATA HDD Space default 320GB 1 x CF internal slot
Power Supply	Default DC 12V /Optional 11~32V DC input
Construction / Color	Aluminum Heatsink + Steel Chassis
Mounting	Wall mount
Dimensions	232(W) x 200(H) x 48 (D) 269(W) x 200(H) x 54 (D) (wall mount)
Operating Temperature	-20 °C ~50 °C
Storage Temperature	-30 °C ~60 °C
Storage Humidity	10%~90%@ 40°C, non-condensing
Certificate	CE / FCC Class A

1.2 Dimensions

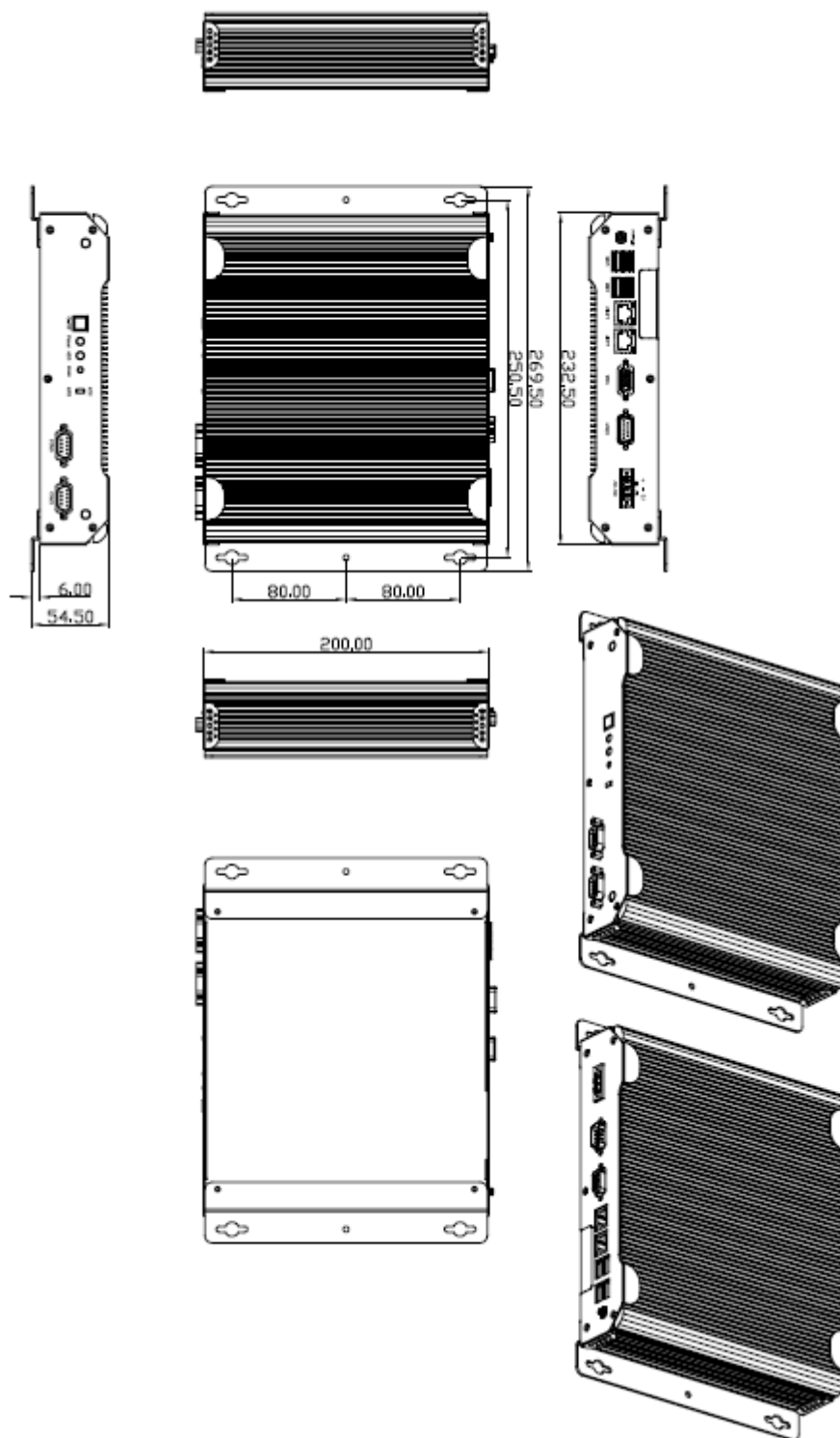


Figure 1.1: Dimensions of the ACS-2120

1.3 Brief Description of the ACS-2120

ACS-2120 is a Fan-less High-efficiency Thermal Solution and ultra-compact standalone Box PC, powered by an Intel Atom D525 1.8GHz and supporting 4 x USB 2.0 ports, 3 x COM Ports, 1 x VGA, support 1 x SATA HDD space, 1 x internal CF slot, 11~32V DC wide-ranging power input etc. It is ideal for kiosks, POS systems, airport terminal controllers, digital entertainments, etc. and running factory operations from small visual interface and maintenance applications to large control process applications. ACS-2120 works very well along with any of our Display Monitor series and it absolutely can provide an easy way to perform control and field maintenance.



Figure 1.2: Front View of ACS-2120

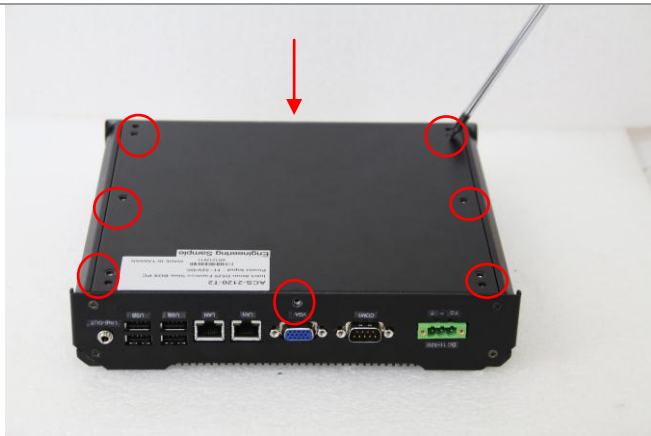


Figure 1.3: Rear View of ACS-2120

1.4 Installation of HDD & CF

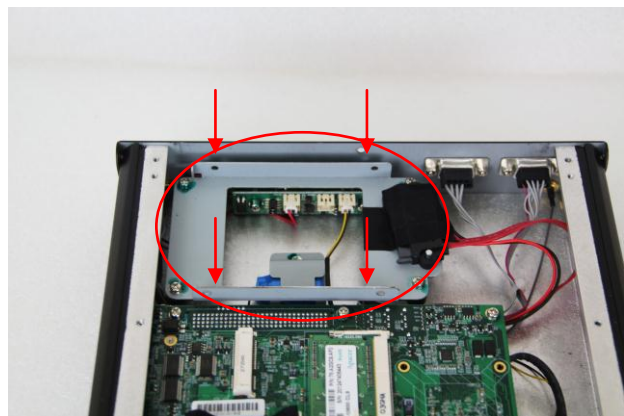
Step 1

Gently remove 8 screws as shown in the picture.



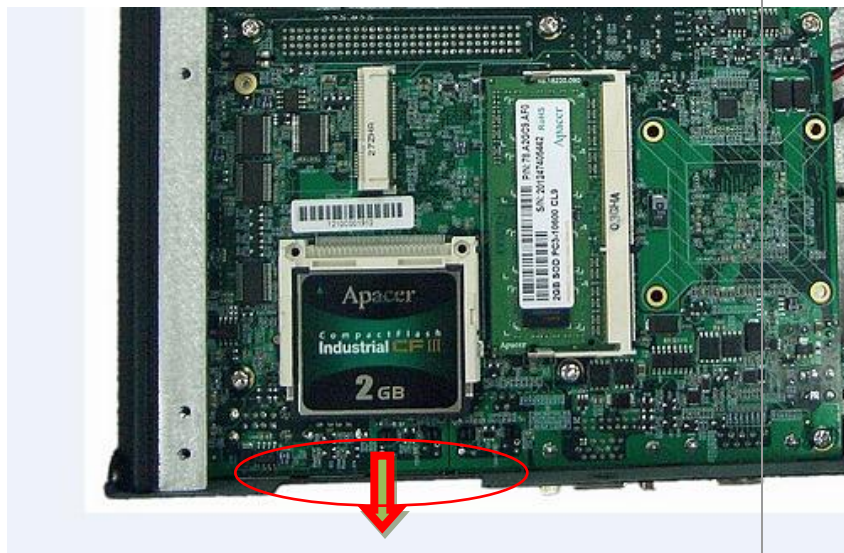
Step 2

There is a hard disk tray to put hard disk. Gently remove the 4 screws in hard disk tray to replace hard disk.



Step 3

There is a CF slot to replace CF.



Chapter 2 Hardware Installation

2.1 Mainboard Specifications

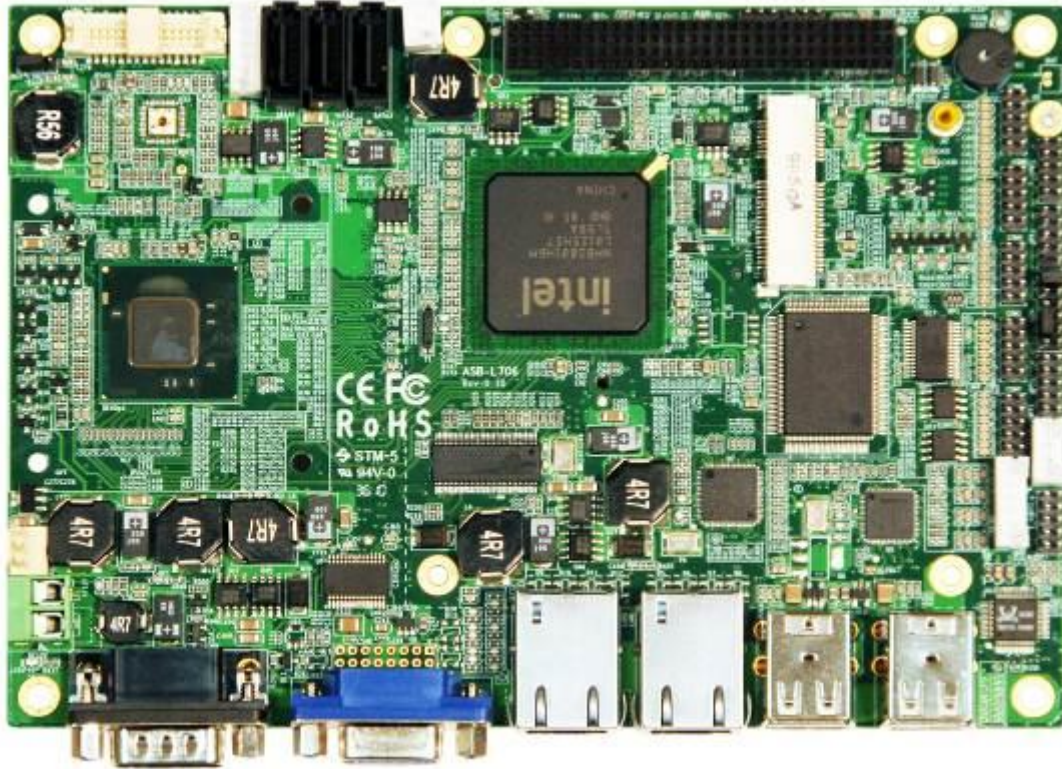


Figure 2.1: Mainboard Overview

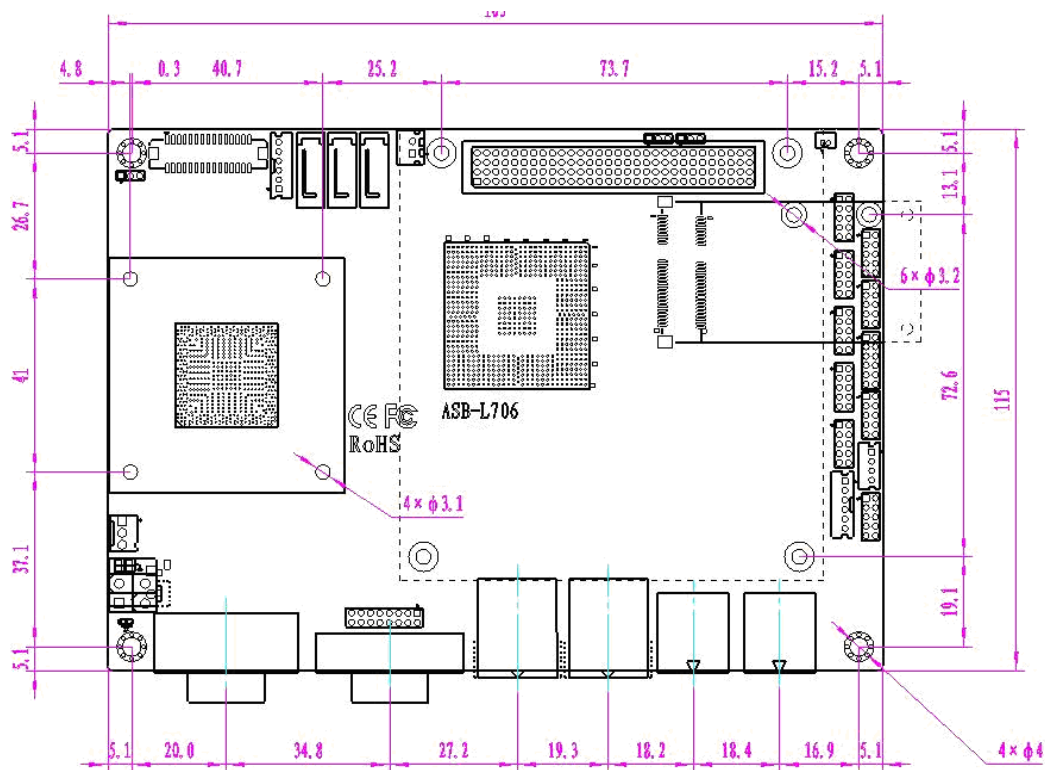


Figure 2.2: Mainboard Dimensions

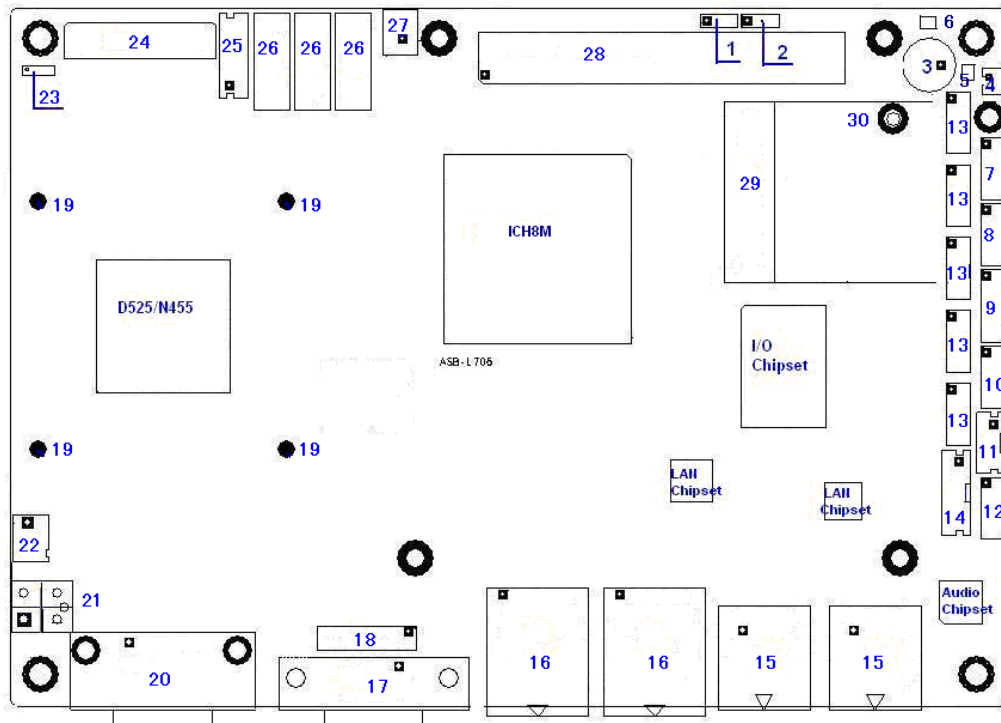


Figure 2.3: Jumpers and Connectors Location-TOP

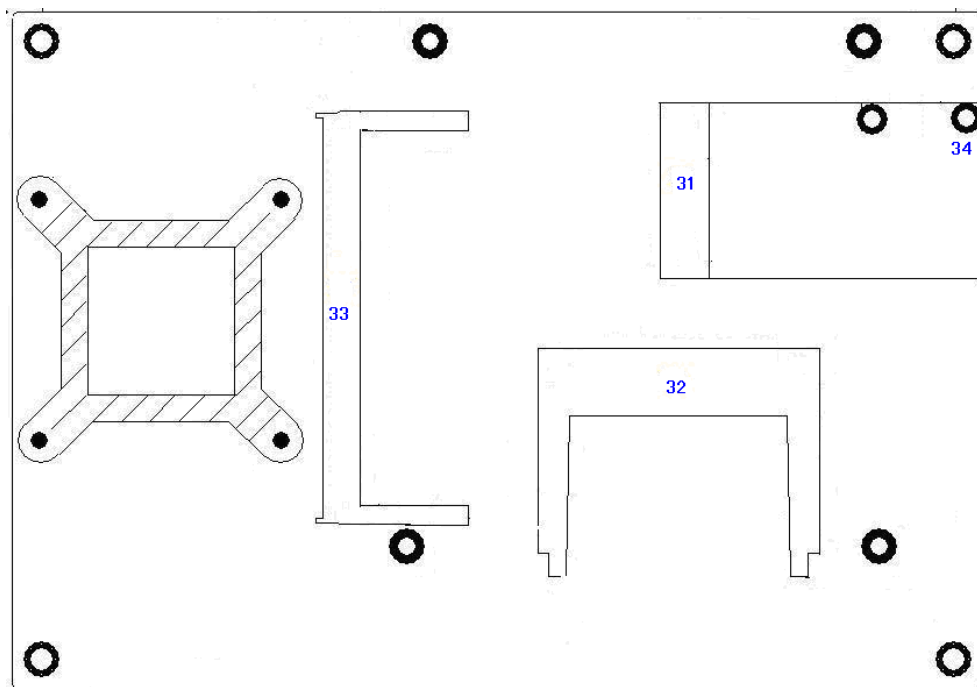


Figure 2.4: Jumpers and Connectors Location- Bottom

Specifications	
Board Size	165mm x 115mm
CPU Support	Intel Atom D525 /1.80GHz (onboard)
Chipset	Intel Atom D525 + Intel ICH8M
Memory Support	1x SO-DIMM (204pins), up to 2GB DDR3 800MHz FSB
Graphics	Integrated by D525 GMA 3150
Super I/O	Winbond W83627UHG
BIOS	AMIBIOS
Storage	3 x SATA Connector 1 x Compact Flash II Slot
Network	2 x RJ-45 1000Mbps LAN Intel 82574L
USB	4 x USB 2.0 stack port for external 2 x USB 2.0 internal Pin header 2 x USB 2.0 internal for mini PCIe
Serial	1 x RS232 port, DB9 connector for external (COM1), pin 9 w/5V/12V/Ring select 1 x RS232/422/485 select header for internal (COM3), default RS232 4 x RS232 header for internal (COM2,COM4,COM5,COM6)
Digital I/O	8-bit digital I/O by Pin header 4-bit digital Input 4-bit digital Output
Battery	Support CR2477 Li battery by 2-pin header
Audio	Support Audio via Realtek ALC662 HD audio decoder Support Line-in, Line-out, MIC by 2x5-pin header
Keyboard /Mouse	1x PS2 keyboard/mouse by 1x6 box pin header
Expansion Bus	1x PC 104+ connector (PCI master 4, jumper for +3.3V & 5V select) 2x mini-PCI-express slot (1x full size, 1x half-size)
Power Management	DC12V input 1 x 2-pin power input connector
Front I/O	by 2x5-pin header Power on/off switch

	Reset switch Power LED status HDD LED status Buzzer
Watchdog Timer	Software programmable 1 – 255 second by Super I/O
External I/O port	1 x COM Port (COM1) 4 x USB 2.0 Ports (stack) 2 x RJ45 GbE Ports (10/100/1000Mbps) 1 x VGA Port 1 x VGA 2x8 Pin Header
Temperature	Operating: 0°C –60°C Storage: -20°C –80°C
Humidity	5% - 95%, non-condensing, operating
Power Consumption	<u>12V /1.6A (Intel D525 processor with 2GB DDR3 DRAM)</u>
EMI/EMS	CE/FCC class A

2.2 Jumpers Setting and Connectors

1. JCLR_CMOS: (2.0mm Pitch 1x3 Pin Header) CMOS clear jumper, CMOS clear operation will permanently reset old BIOS settings to factory defaults.

JCLR_CMOS	CMOS
CLOSE 1-2	NORMAL (default)
CLOSE 2-3	Clear CMOS



Procedures of CMOS clear:

- 5.4.1.1 Turn off the system and unplug the power cord from the power outlet.
 - 5.4.1.2 To clear the CMOS settings, use the jumper cap to close pins 2 and 3 for about 3 seconds then reinstall the jumper clip back to pins 1 and 2.
 - 5.4.1.3 Power on the system again.
 - 5.4.1.4 When entering the POST screen, press the <F1> or <DEL> key to enter CMOS Setup Utility to load optimal defaults.
 - 5.4.1.5 After the above operations, save changes and exit BIOS Setup.
2. JVCCIO: (2.0mm Pitch 1x3 Pin Header) PC104+ port voltage selection jumper, select voltage for PCI-104 Plus device. **The default for this jumper is “all open”, meaning the user must select the voltage to be used.**

JVCCIO	PC104+ VCCIO Voltage
CLOSE 1-2	+3.3V
CLOSE 2-3	+5V
all Open	(Default)

3. BZ: onboard buzzer.
4. JCOM6: (2.0mm Pitch 1x3 Pin Header) COM6 setting jumper, pin 1~3 are used to select signal out of pin 10 of COM6 port.

JP1 Pin#	Function
Close 1-2	COM6 Pin10=+5V (default)
Close 2-3	COM6 Pin10=+12V (option)

5. JP2: (2.0mm Pitch 1X2 Pin Header), ATX Power and Power auto on setting jumper.

JP2	Mode
Open	ATX Power Mode

6. BAT: (1.25mm Pitch 1x2 box Pin Header) 3.0V Li battery is embedded to provide power for CMOS.

Pin#	Signal Name
Pin1	VBAT
PIN2	Ground

7. F_PANEL: (2.0mm Pitch 2X5 Pin Header), Front panel connector.

Signal Name	Pin#	Pin#	Signal Name
HD LED+	1	2	POWER LED+
HD LED-	3	4	POWER LED-
Ground	5	6	PWRBTN
RESET	7	8	Ground
BUZZER+	9	10	BUZZER-

Pin1-3: **HDD LED**, They are used to connect hard disk activity LED. The LED blinks when the hard disk is reading or writing data.

Pin2-4: **POWER LED**, They are used to connect power LED. When the system is powered on or under S0/S1 state, the LED is normally on; when the system is under S4/S5 state, the LED is off.

Pin5-6: **POWER on/off Button**, They are used to connect power switch button. The two pins are disconnected under normal condition. You may short them temporarily to realize system startup & shutdown or awaken the system from sleep state.

Pin7-8: **RESET Button**, They are used to connect reset button. The two pins are disconnected under normal condition. You may short them temporarily to realize system reset.

Pin9-10: **BUZZER**, They are used to connect an external buzzer.



Note:

When connecting LEDs and buzzer, pay special attention to the signal polarity. Make sure that the connector pins have a one-to-one correspondence with chassis wiring, or it may cause boot up failure.

8. **USB3:** (2.0mm Pitch 2x5 Pin Header) ,Front USB connector, it provides two USB ports via a dedicated USB cable, speed up to 480Mb/s.

Signal Name	Pin#	Pin#	Signal Name
+5V	1	2	+5V
USB_P6_DN	3	4	USB_P7_DN
USB_P6_DP	5	6	USB_P7_DP
Ground	7	8	Ground
NC	9	10	Ground



Note:

Before connection, make sure that pinout of the USB Cable is in accordance with that of the said tables. Any inconformity may cause system down and even hardware damages.

9. **JCOM:** (2.0mm Pitch 2x6 Pin Header) COM1 and COM3 setting jumper, pin 1~6 are used to select signal out of pin 9 of COM1 port; pin 7~12 are used to select output type for COM3 port (RS232 Type or RS422 Type or RS485 Type).

JCOM Pin#	Function
CLOSE 1-2	COM1 Pin9=RI (default)
CLOSE 3-4	COM1 Pin9=+5V (option)
CLOSE 5-6	COM1 Pin9=+12V (option)
CLOSE 7-9	COM3 FOR RS232 FROM COM3 (default)
CLOSE 8-10	COM3 FOR RS485 FROM COM33 (option)
CLOSE 10-12	COM3 FOR RS422 FROM COM33 (option)



Note:

Since COM3 and COM33 use the same address, they cannot work at the same time.

10. **GPIO:** (2.0mm Pitch 2x5 Pin Header),General-purpose input/output port, it provides a group of self-programming interfaces to customers for flexible use.

Signal Name	Pin#	Pin#	Signal Name
GPIO20	1	2	GPIO60
GPIO21	3	4	GPIO61
GPIO22	5	6	GPIO62
GPIO23	7	8	GPIO63
Ground	9	10	+5V

11. **COM33:** (2.0mm Pitch 1x4 box Pin Header),it provides selectable RS422/RS485 serial signal output.

RS422 Type (option)		RS485 Type (option)	
Signal Name	Pin#	Pin#	Signal Name
422RXD-	1	1	NC
422RXD+	2	2	NC
422TXD-	3	3	485B-
422TXD+	4	4	485A+



Note:

Use COM3 RS232/RS485 Function, please setting JCOM Jumpers and BIOS CMOS Setup.

Path:

BIOS Setup Utility \ Advanced Setting \ SuperIO Configuration \ Serial Port3

Type:

[RS232

Type]

[RS485

Type]

12. **F_AUDIO:** (2.0mm Pitch 2x5 Pin Header), Front Audio, An onboard Realtek ALC662 codec is used to provide high-quality audio I/O ports. Line Out can be connected to a headphone or amplifier. Line In is used for the connection of external audio source via a Line in cable. MIC is the port for microphone input audio.

Signal Name	Pin#	Pin#	Signal Name
FRONT-OUT-L	1	2	LINEIN_R
AUD_AGND	3	4	AUD_AGND
FRONT-OUT-R	5	6	LINEIN_L
AUD_AGND	7	8	AUD_AGND
FRONT-MIC1	9	10	FRONT-MIC

			2
--	--	--	---

13. COM2-COM6: (2.0mm Pitch 2x5 Pin Header), COM2 COM3 COM4 COM5 COM6 Ports, up to 5 standard RS232 ports are provided. They can be used directly via COM cable connection.

COM2,COM3,COM4,COM5 Signal Name:

Signal Name	Pin#	Pin#	Signal Name
DCD	1	2	RXD
TXD	3	4	DTR
Ground	5	6	DSR
RTS	7	8	CTS
RI	9	10	NC

COM6 Signal Name:

Signal Name	Pin#	Pin#	Signal Name
DCD	1	2	RXD
TXD	3	4	DTR
Ground	5	6	DSR
RTS	7	8	CTS
RI	9	10	JCOM6 Setting: Pin1-2 : 5V (Default) Pin2-3:12V (option)



Note:

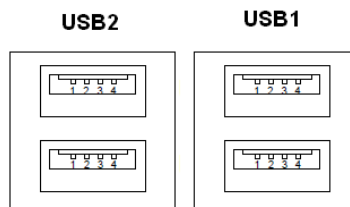
COM3 port is controlled by pins No.7~10 of JCOM. For details, please refer to description of JCOM and COM33 BIOS Setup.

14. KB/MS: (2.0mm Pitch 1x6 box Pin Header), PS/2 keyboard and mouse port, the port can be connected to PS/2 keyboard or mouse via a dedicated cable for direct used.

Pin#	Signal Name
1	KBDATA
2	MSDATA

3	Ground
4	+5V
5	KBCLK
6	MSCLK

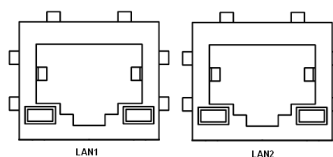
15. **USB1/2:** (Double stack USB type A), Rear USB connector, it provides up to 4 USB2.0 ports, speed up to 480Mb/s.



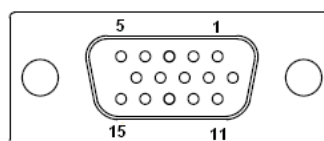
Each USB Type A Receptacle (2 Ports) Current limited value is 1.5A.

If the external USB device current exceeds 1.5A, please separate connectors into different Receptacle.

16. **LAN1/2:** (RJ45 Connector), Rear LAN port, 2 standard 10/100/1000M RJ-45 Ethernet ports are provided. Used Intel 82567LM chipset, LINK LED (green) and ACTIVE LED (yellow) respectively located at the left-hand and right-hand side of the Ethernet port indicate the activity and transmission state of LAN.



17. **VGA:** (CRT Connector DB15), Video Graphic Array Port, provide high-quality video output. **they can not work at the same time for VGA and VGA-PH.**



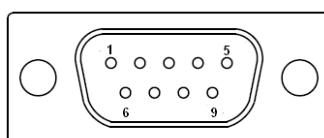
18. **VGA-PH:** (CRT 2.0mm Pitch 2x8 Pin Header), Video Graphic Array Port, Provide 2x8 Pin cable to VGA Port, **they can not work at the same time for VGA and VGA-PH.**

Signal Name	Pin#	Pin#	Signal Name
CRT_RED	1	2	Ground

CRT_GREEN	3	4	Ground
CRT_BLUE	5	6	NC
CRT_R_HSYN C	7	8	CRT_PU_DDC_DAT
CRT_R_VSYN C	9	10	CRT_PU_DDC_CLK
NC	11	12	NC
+12V	13	14	Ground
+12V	15	16	Ground

19. CPU SCREW HOLES: Four screw holes for fixed CPU Cooler assemble.

20. COM1: (Type DB9),Rear serial port, standard DB9 serial port is provided to make a direct connection to serial devices. COM1 port is controlled by pins No.1~6 of **JCOM**,select output Signal RI or 5V or 12v, For details, please refer to description of JCOM.



21. AT12V: (5.0mm 1x2 Pin Connector),DC12V System power input connector ◦

Pin#	Signal Name
1	+12V
2	Ground



Note:

Make sure that the voltage of power supply is DC(12±5%)V before power on, or it may cause boot up failure and even system damage.

22. FAN: (2.54mm Pitch 1x3 Pin Header),Fan connector, cooling fans can be connected directly for use. You may set the rotation condition of cooling fan in menu of BIOS CMOS Setup.

Pin#	Signal Name
1	Ground
2	VCC
3	Rotation

	detection
--	-----------



Note:

Output power of cooling fan must be limited under 5W.

23. JBG_T_CTRL: (2.0mm Pitch 1x3 Pin Header), Backlight Control jumper setting for LVDS1.

Signal Name	BKL For LVDS
PWM	Close1-2
LEVEL	Close2-3



Note:

Please check first your LVDS panel backlight control by LEVEL or PWM?
Panel backlight control by Level 5V.

24. LVDS: For 18 bit LVDS output connector, Fully supported by Intel Atom D525 chipset, the interface features single channel 18-bit output. Model name of the interface connector is Hirose DF13-30DP-1.25V.

Signal Name	Pin#	Pin#	Signal Name
LVDS1_VDD5	1	2	LVDS1_VDD5
Ground	3	4	Ground
LVDS1_VDD3	5	6	LVDS1_VDD3
3			3
LADATAN0	7	8	NC
LADATAP0	9	10	NC
LADATAN1	11	12	NC
LADATAP1	13	14	NC
LADATAN2	15	16	NC
LADATAP2	17	18	NC
LACLKN	19	20	NC
LACLKP	21	22	NC
LDDC_CLK	23	24	NC
LBKLT_EN	25	26	BKLT_CTRL
Ground	27	28	Ground
+V12S	29	30	+V12S

25. BKL: (2.0mm Pitch 1x5 box Pin Header), Backlight control connector for LVDS1.

Pin#	Signal Name
1	+DC12V
2	+DC12V
3	Ground
4	Ground
5	BKLT_EN
6	BKLT_CTRL

26. SATA1/2/3: (SATA 7P),SATA1,SATA2,SATA3 SATA Connectors,Three SATA connectors are provided, with transfer speed up to 3.0Gb/s.
27. CN1: (2.5mm Pitch 1x2 box Pin Header),an onboard 5V output connector is reserved to provide power for IDE/SATA devices.

Pin#	Signal Name
1	+DC5V
2	Ground



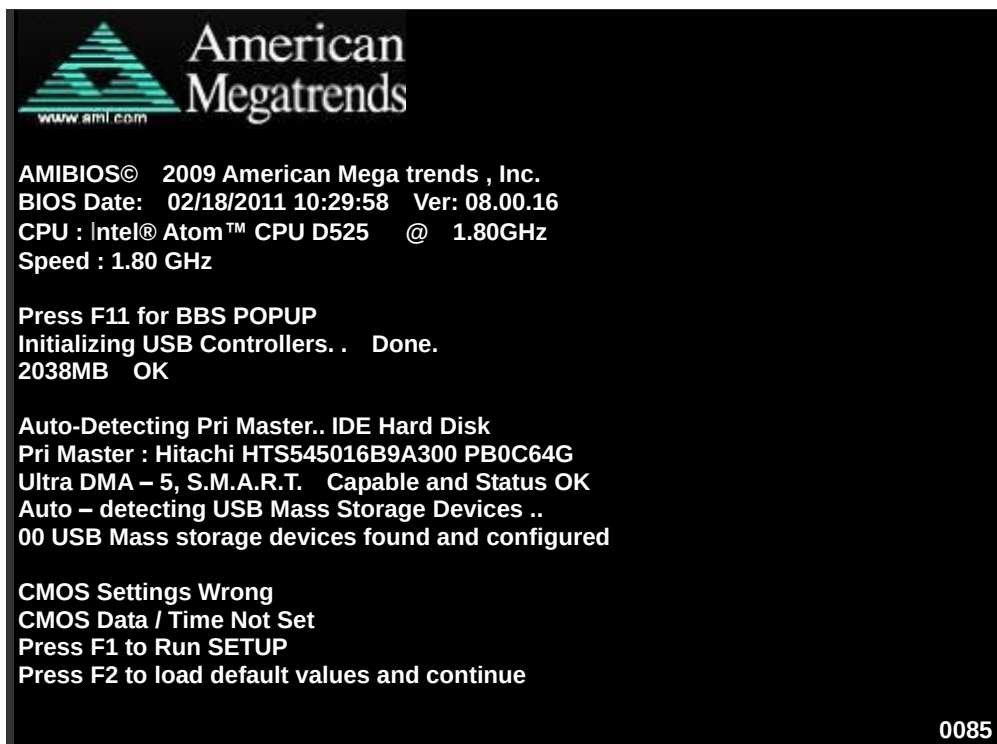
Note:

Output current of the connector must not be above 1A.

28. PC104+: (4x30 Pin), PC104 plus connector, it conforms to standard PC104+ specification.
29. MPCIE2: (30mmx30mm Socket 52Pin),mini PCIE socket, it is located at the top, it supports mini PCI-E devices with USB2.0, SMBUS and PCI-E signal.
30. MPCIE2 SCREW HOLES: one screw holes for fixed MPCIE2 assemble.
31. MPCIE: (50.95x30mm socket 52Pin),mini PCIE socket, it is located at the bottom, it supports mini PCI-E devices with USB2.0, SMBUS and PCI-E signal.
32. CF: CF_Card socket, it is located at the bottom of the board and serves as an insert interface for Type I and Type II Compact Flash card. The operating voltage of CF card can be set as 3.3V or 5V. **The default setting of the product is 3.3V.**
33. DDR3: (SO-DIMM 204Pin socket), DDRIII memory socket, the socket is located at the bottom of the board and supports 204Pin 1.5V DDRIII 800MHz FSB SO-DIMM memory module up to 2G.

3.1 Operations after POST Screen

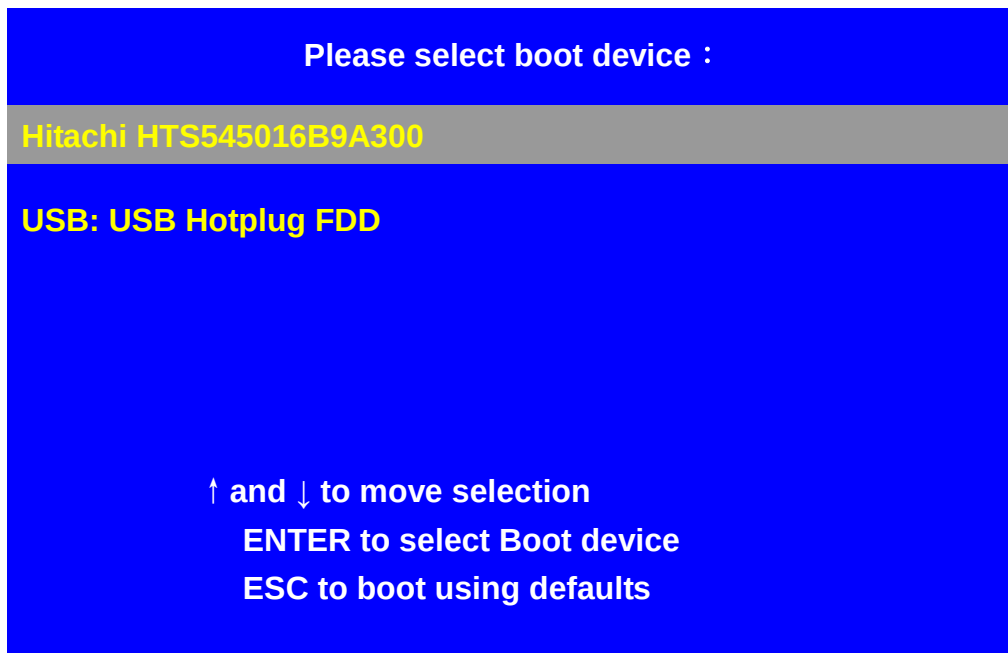
After CMOS discharge or BIOS flashing operation, the system will display the following screen for your further operation. Press F2 key to continue or F1 key to enter CMOS Setup.



After optimizing and exiting CMOS Setup, the POST screen displayed for the first time is as follows and includes basic information on BIOS, CPU, memory, and storage devices.

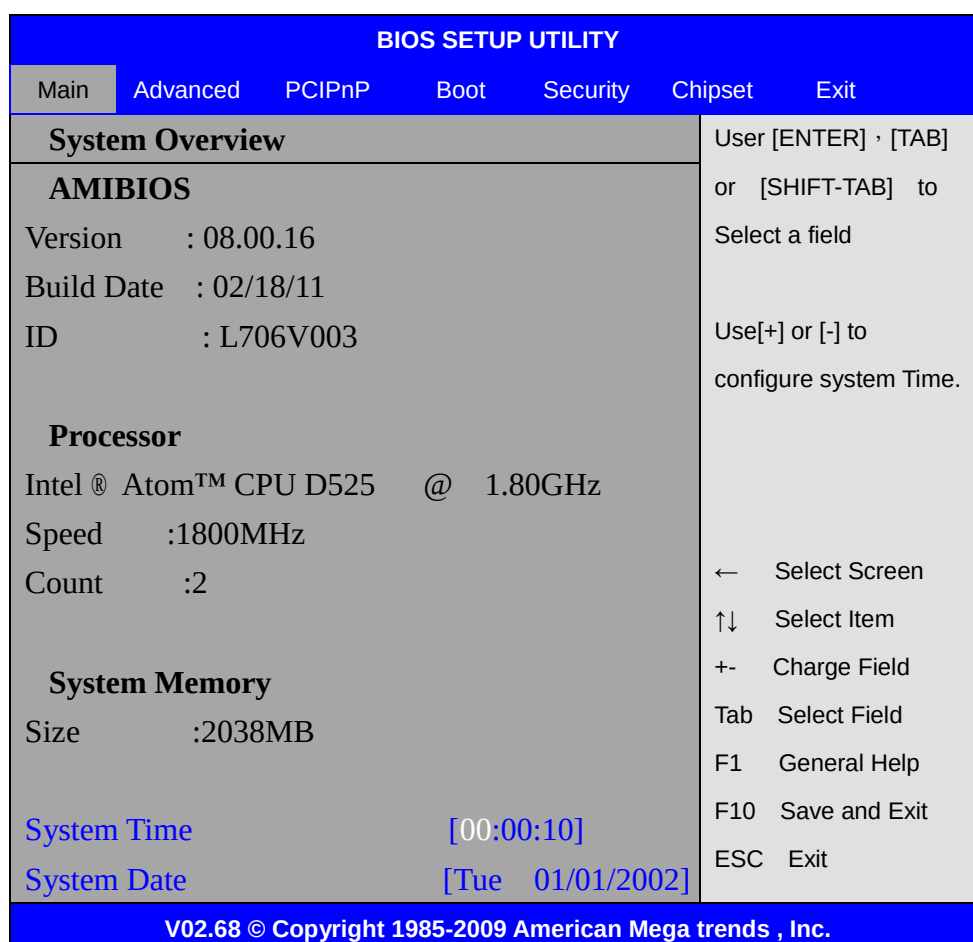


Press **F11** key to enter Boot Menu during POST, as shown by the following figure.



3.2 BIOS SETUP UTILITY

Press [Del] key to enter BIOS Setup utility during POST, and then a main menu containing system summary information will appear.



3.3 System Overview

BIOS SETUP UTILITY	
Main	Advanced PCIPnP Boot Security Chipset Exit
System Overview	
AMIBIOS Version : 08.00.16 Build Date : 02/18/11 ID : L706V003 Processor Intel ® Atom™ CPU D525 @ 1.80GHz Speed :1800MHz Count :2 System Memory Size :2038MB System Time [00:06:31] System Date [Tue 01/01/2002]	User [ENTER] , [TAB] or [SHIFT-TAB] to Select a field Use[+] or [-] to configure system Time. ← Select Screen ↑↓ Select Item +- Charge Field Tab Select Field F1 General Help F10 Save and Exit ESC Exit
V02.68 © Copyright 1985-2009 American Mega trends , Inc.	

System Time:

Set the system time, the time format is:

Hour : 0 to 23

Minute : 0 to 59

Second : 0 to 59

System Date:

Set the system date, the date format is:

Day: Note that the 'Day' automatically changes when you set the date.

Month: 01 to 12

Date: 01 to 31

Year: 2010 to 2099

3.4 Advanced Settings

BIOS SETUP UTILITY	
Main	Advanced
Advanced Settings WARNING: Setting wrong values In below sections may cause system to malfunction. ▶ CPU Configuration ▶ IDE Configuration ▶ Super IO Configuration ▶ Hardware Health Configuration ▶ ACPI Configuration ▶ AHCI Configuration ▶ ASF Configuration ▶ MPS Configuration ▶ PCI Express Configuration ▶ Smbios Configuration ▶ USB Configuration	Configure CPU ← Select Screen ↑↓ Select Item Enter Charge Field F1 General Help F10 Save and Exit ESC Exit
V02.68 © Copyright 1985-2009 American Mega trends , Inc.	

3.4.1 CPU Configuration

BIOS SETUP UTILITY	
Advanced	
Configure advanced CPU settings Module Version: 3F.1C Manufacturer : Intel Intel® Atom™ CPU D525 @ 1.80GHz Frequency :1.80GHz FSB Speed : 800MHz Cache L1 :48KB Cache L2 :1024KB Ratio Actual Value :9 Max CPUID Value Limit [Disabled] Execute-Disable Bit Capability [Enabled] Hyper Threading Technology [Enabled]	Disabled for Windows XP ← Select Screen ↑↓ Select Item +- Charge Field F1 General Help F10 Save and Exit ESC Exit
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Max CPUID Value Limit:

[Disabled]

[Enabled]

Execute Disable Bit Capability:

[Enabled]

[Disabled]

Hyper Threading Technology:

[Enabled]

[Disabled]

3.4.2 IDE Configuration

BIOS SETUP UTILITY		
Advanced		
IDE Configuration		Options
ATA/IDE Configuration	[Enhanced]	Disabled
Configure SATA as	[IDE]	Enhanced
▶ Primary IDE Master : [Not Detected]		
▶ Primary IDE Slaver : [Not Detected]		
▶ Secondary IDE Master : [Not Detected]		
▶ Secondary IDE Slaver : [Not Detected]		← Select Screen
▶ Third IDE Master : [Not Detected]		↑↓ Select Item
▶ Third IDE Slaver : [Not Detected]		+ - Charge Field
▶ Fourth IDE Master : [Not Detected]		F1 General Help
▶ Fourth IDE Slaver : [Not Detected]		F10 Save and Exit
Hard Disk Write Protect [Disabled]		ESC Exit
IDE Detect Time Out (Sec) [35]		
ATA(Pi) 80Pin Cable Detection [Host & Device]		

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ATA/IDE Configuration:

[Enhanced]

[Disabled]

Configure SATA as:

[IDE]

[AHCI]

Hard Disk Write Protect:

[Disabled]

[Enabled]

IDE Detect Time Out :

[35]

Options: [0,5,10,15,20,25,30,35]

ATA(PI) 80Pin Cable Detection:

[Host & Device]

[Host]

[Device]

3.4.3 Super IO Configuration

BIOS SETUP UTILITY		
Advanced		
Configure Win627UHG Super IO Chipset		Allow BIOS to Select
Serial Port1 Address	[3F8]	Serial Port Base
Serial Port1 IRQ	[IRQ4]	Address.
Serial Port2 Address	[2F8]	
Serial Port2 IRQ	[IRQ3]	
Serial Port3 Address	[3E8]	
Serial Port3 IRQ	[IRQ11]	
Serial Port3 Type	[RS232	
Type]		
Serial Port4 Address	[2E8]	← Select Screen
Serial Port4 IRQ	[IRQ10]	↑↓ Select Item
Serial Port5 Address	[2F0]	+ - Charge Field
Serial Port5 IRQ	[IRQ11]	F1 General Help
Serial Port6 Address	[2E0]	F10 Save and Exit
Serial Port6 IRQ	[IRQ10]	ESC Exit
WatchDog Setting	[Disable]	
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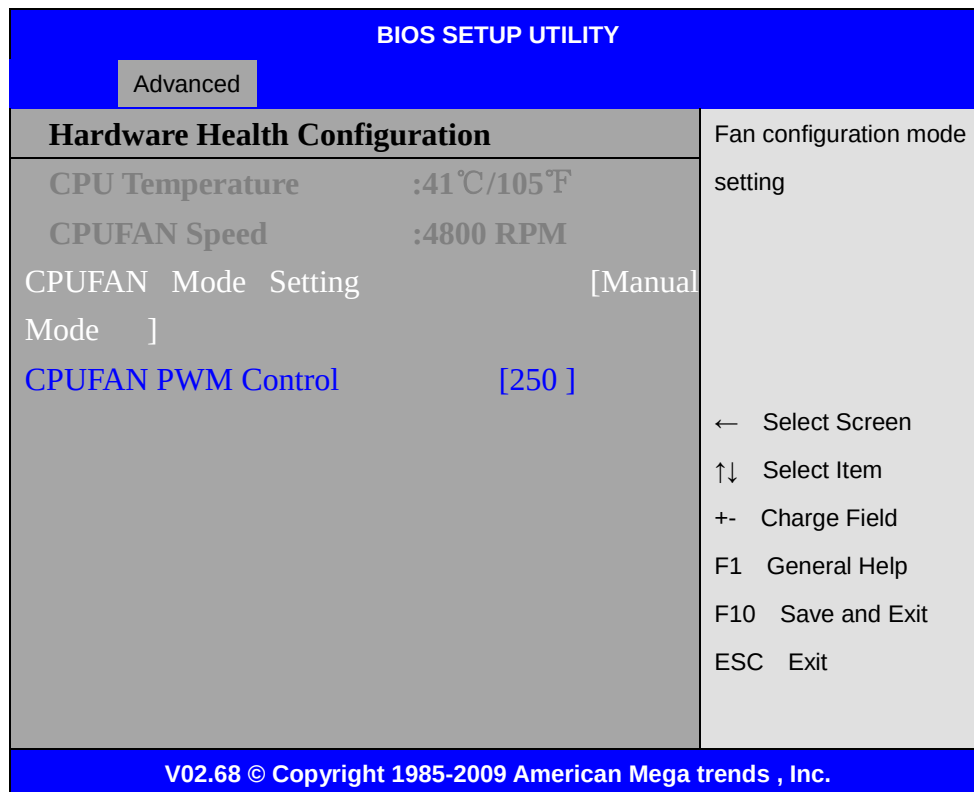
Serial Port3 Type:

COM3 Options: [RS232 Type] or [RS485 Type]
[RS232 Type] for RS232 Mode
[RS485 Type] for RS485 or RS422 Mode

WatchDog Setting:

[Disable]
Options: [10sec,20sec,30sec,40sec,1min,2min,4min]

3.4.4 Hardware Health Configuration



CPU Temperature:

Show you the current CPU temperature.

CPUFAN Speed:

Show you the current CPU Fan operating speed.

CPUFAN Mode Setting:

[Manual Mode]
[Thermal Cruise Mode]
[Speed Cruise Mode]
[Smart Fan3 Mode]

3.4.5 ACPI Configuration

Section for Advanced ACPI Configuration

- Options:
- [Advanced ACPI Configuration]
 - [Chipset ACPI Configuration]

3.4.6 AHCI Configuration

BIOS SETUP UTILITY

Advanced

AHCI Configuration

▶ AHCI Port0 : [Not Detected]

▶ AHCI Port1 : [Not Detected]

▶ AHCI Port2 : [Not Detected]

While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detecting of IDE devices

← Select Screen

↑↓ Select Item

Enter Go to sub screen

F1 General Help

F10 Save and Exit

ESC Exit

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While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detecting of IDE devices

3.4.7 MPS Configuration

BIOS SETUP UTILITY

Advanced

MPS Configuration

MPS Revision [1.4]

Select Revision

← Select Screen

↑↓ Select Item

+ - Charge Field

	F1 General Help F10 Save and Exit ESC Exit
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Configure the Multi-Processor Table.

MPS Revision:

[1.4]

[1.1]

3.4.8 PCI Express Configuration

BIOS SETUP UTILITY		
Advanced		
PCI Express Configuration		Enables/Disables
Relaxed Ordering	[Auto]	PCI Express Device
Maximum Payload Size	[Auto]	Relaxed Ordering
Extended Tag Field	[Auto]	
No Snoop	[Auto]	
Maximum Read Request Size	[Auto]	← Select Screen
Active State Power Management	[Disabled]	↑↓ Select Item
Extended Synch	[Auto]	+ - Charge Field
		F1 General Help
		F10 Save and Exit
		ESC Exit
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Relaxed Ordering:

[Auto]

[Disabled]

[Enable]

Maximum Payload Size:

[Auto]

[128/256/512/1024/2048/4096 Bytes]

Set Maximum Payload of allow System BIOS select the value.

Extended Tag Field:

[Auto]

[Disabled]

[Enable]

No Snoop:

[Auto]

[Disabled]

[Enable]

Maximum Read Request Size:

[Auto]

[128/256/512/1024/2048/4096 Bytes]

Set Maximum Read Request Size of PCI Express Device or allow System BIOS select the value.

Active State Power Management:

[Disabled]

[Enable]

Extended Synch:

[Auto]

[Disabled]

[Enable]

3.4.9 Smbios Configuration

BIOS SETUP UTILITY	
Advanced	
Smbios Configuration	SMBIOS SMI Wrapper
Smbios Smi Support [Enabled]	Support for PnP Func 50h-54h
← Select Screen ↑↓ Select Item + - Charge Field F1 General Help F10 Save and Exit ESC Exit	
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Smbios Smi Support:

[Enable]

[Disabled]

3.4.10 USB Configuration

BIOS SETUP UTILITY	
Advanced	
USB Configuration	Enables support for legacy USB.ATUO option disables legacy support if no USB devices are connected
Module Version – 2.24.5-14.4	
USB Devices Enabled : None	
Legacy USB Support	[Enabled]
USB2.0 Controller Mode	[Hispeed]
BIOS EHCI Hand-Off	[Enabled]
Hotplug USB FDD Support	[Auto]
▶ USB Mass Storage Device Configuration	
← Select Screen ↑↓ Select Item +- Change Field F1 General Help F10 Save and Exit ESC Exit	
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Legacy USB Support:

[Enable]
[Disabled]

USB2.0 Controller Mode:

[HiSpeed]
[FullSpeed]

BIOS EHCI Hand-Off:

[Enable]
[Disabled]

Hotplug USB FDD Support:

[Auto]
[Disabled]
[Enable]

USB Mass Storage Device Configuration:

BIOS SETUP UTILITY	
Advanced	
USB Mass Storage Device Configuration	
USB Mass Storage Reset Delay	[20 Sec]
Device #1 USB Hotplug	
Emulation Type	[Auto]
Number of seconds POST waits for the USB mass storage device after start unit command	
← Select Screen	
↑↓ Select Item	
+- Change Field	
F1 General Help	
F10 Save and Exit	
ESC Exit	
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3.5 Advanced PCI/PnP Settings

This part describes configurations to be made on PCI bus system. PCI, namely Personal Computer Interconnect, is a computer bus that allows I/O device to operate nearly as fast as CPU in its own way. Some technical terms will be mentioned here. **We recommend that non-professional users not make changes from factory default settings.**

BIOS SETUP UTILITY						
Main	Advanced	PCIPNP	Boot	Security	Chipset	Exit
Advanced PCI/PnP Settings		Clear NURAM during System Boot				
WARNING: Setting wrong values In below sections may cause system to malfunction.						
Clear NVRAM		[No]				
Plug & Play O/S		[No]				
PCI Latency Timer		[64]				
Allocate IRQ to PCI VGA		[Yes]				
Palette Snooping		[Disabled]				
PCI IDE BusMaster		[Enabled]				
OffBoard PCI/ISA IDE Card		[Auto]				
			← Select Screen			
			↑↓ Select Item			

IRQ3 [Available]	+ - Charge Field
IRQ4 [Available]	F1 General Help
IRQ5 [Available]	F10 Save and Exit
IRQ6 [Available]	ESC Exit
IRQ7 [Available]	
IRQ9 [Available]	
IRQ10 [Available]	
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Clear NVRAM:

[No]

[Yes]

Plug & Play OS:

[No]

[Yes]

PCI Latency Timer:

[64]

[32]

[96]

[128]

[160]

[192]

[224]

[248]

Allocate IRQ to PCI/VGA:

[Yes]

[No]

Palette Snooping:

[Disabled]

[Enable]

PCI IDE BusMaster:**[Disabled]**

[Enable]

OffBoard PCI/ISA IDE Card:

Some PCI IDE cards may require this to be set to the PCI slot number that is holding the card. Auto:Works for most PCI IDE Cards.

[Auto]

[PCI Slot1]

[PCI Slot2]

[PCI Slot3]

[PCI Slot4]

[PCI Slot5]

[PCI Slot6]

IRQ3/4/5/7/9/10/11/14/15:**[Available]**

[Reserved]

Available: Specified IRQ is available to be used by PCI/PnP devices.

Reserved: Specified IRQ is reserved for use by legacy ISA devices.

DMA Channel 0/1/3/5/6/7:**[Available]**

[Reserved]

Available: Specified DMA is available to be used by PCI/PnP devices.

Reserved: Specified DMA is reserved for use by legacy ISA devices.

Reserved Memory Size:

Size of memory block to reserve for legacy ISA devices.

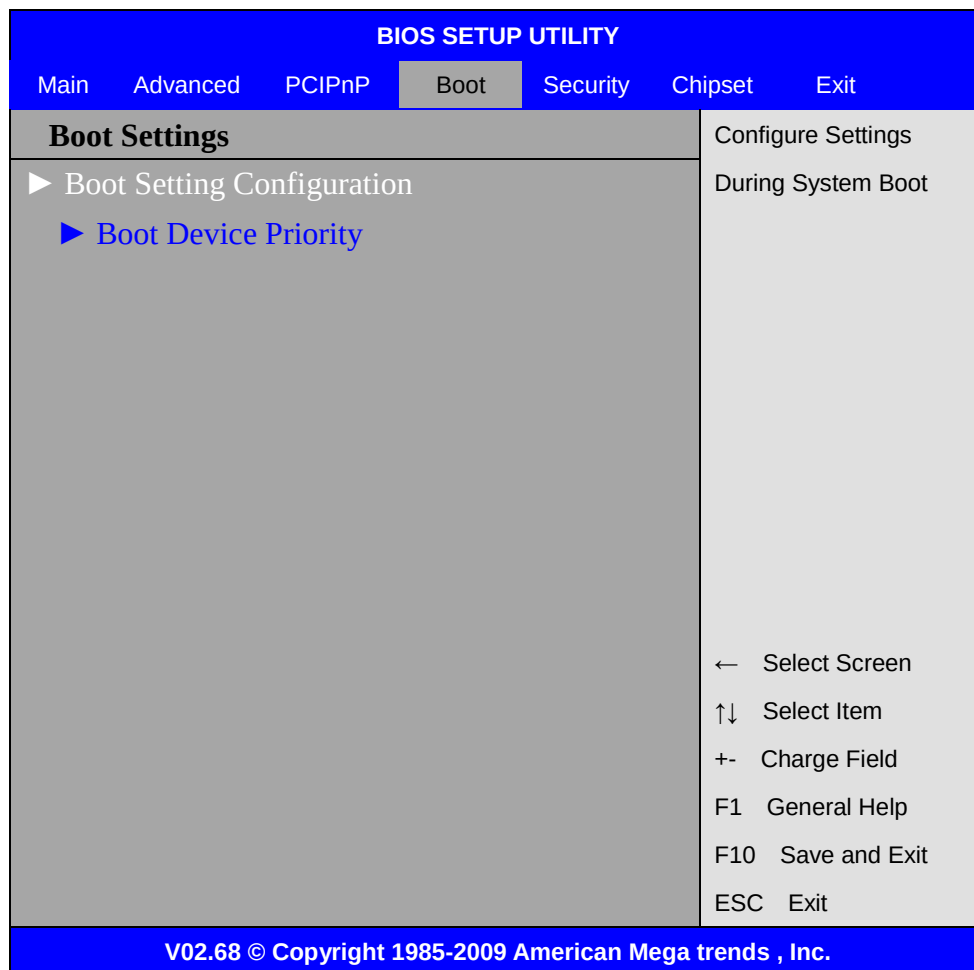
[Disabled]

[16k]

[32k]

[64k]

3.6 Boot Settings



Boot Setting Configuration :

Quick Boot:

[Enabled]

[Disabled]

Allows BIOS to skip certain tests while booting .This will decrease the time needed to boot the system.

Quiet Boot:

[Disabled]

[Enabled]

Disabled: Displays normal POST messages.

Enabled: Displays OEM logo instead of POST messages.

AddOn ROM Display Mode:

Set display mode for Option ROM.

[Force BIOS]

[Keep Current]

Bootup Num — Lock:

Select Power-on state for Numlock.

[On]

[Off]

PS/2 Mouse Support,:

Select support for PS/2 Mouse.

[Auto]

[Enabled]

[Disabled]

Wait For 'F1' If Error:

Wait for F1 key to be pressed if error occurs.

[Enabled]

[Disabled]

Hit 'DEL' Messgae Display :

Displays "press" DEL to run Setup in POST.

[Enabled]

[Disabled]

Interrupt 19 Capture:

[Disabled]

[Enabled]

Enabled: Allows option ROMs to trap interrupt 19.

Boot Device Priority:

Specifies the Boot Device Priority sequence.

3.7 Security Settings

BIOS SETUP UTILITY						
Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit
Security Settings				Install or Change the password.		
Supervisor Password :Not Installed						
User Password :Not Installed						
Change Supervisor Password						
Change User Password						
Boot Sector Virus Protection [Disabled]						
				← Select Screen		
				↑↓ Select Item		
				Enter Charge		
				F1 General Help		
				F10 Save and Exit		
				ESC Exit		
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Change Supervisor Password:
Install or Change the password.

Change User Password:
Install or Change the password.

Password Check:
[Setup]
[Always]
Setup: Check password while invoking setup.
Always: Check password while invoking setup a well as on each boot.

Boot Sector Virus Protection:
[Disabled]
[Enabled]
Enabled / Disabled Boot Sector Virus Protection.

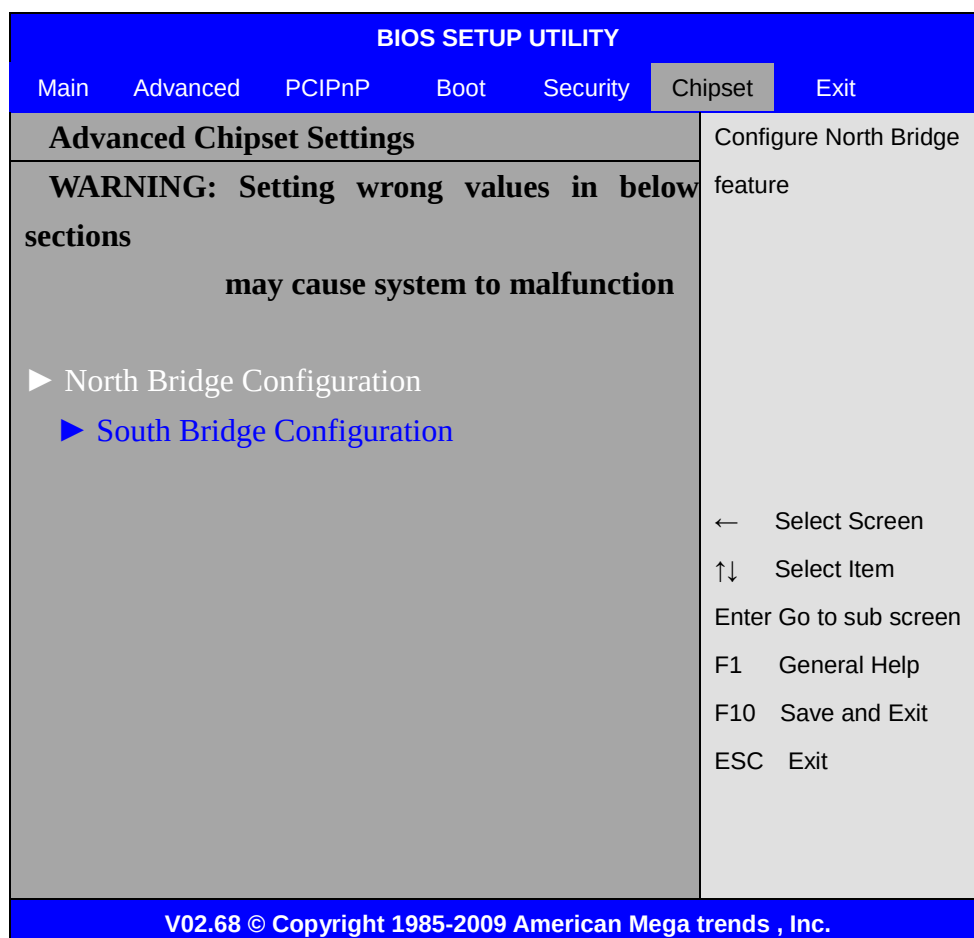
Type the password with up to 6 characters and then press <Enter> key. This will clear all previously typed CMOS passwords. You will be requested to confirm the password. Type the password again and press <Enter> key. You may press <Esc> key to abandon password entry operation.

To clear the password, just press <Enter> key when password input window pops up. A confirmation message will be shown on the screen as to whether the password will be disabled. You will have direct access to BIOS setup without typing any password after system reboot once the password is disabled.

Once the password feature is used, you will be requested to type the password each time you enter BIOS setup. This will prevent unauthorized persons from changing your system configurations.

Also, the feature is capable of requesting users to enter the password prior to system boot to control unauthorized access to your computer. Users may enable the feature in Security Option of Advanced BIOS Features. If Security Option is set to System, you will be requested to enter the password before system boot and when entering BIOS setup; if Security Option is set to Setup, you will be requested for password for entering BIOS setup.

3.8 Advanced Chipset Settings





Note: Due to limited address length of BIOS, only a portion of panel parameters are listed in BIOS Setup. If the connected panel is not included in the parameter list, display problem will occur. In this case, Please do not change BIOS setup.

3.8.1 North Bridge Configuration

BIOS SETUP UTILITY	
Chipset	
North Bridge Chipset Configuration	Options
PCI MMIO Allocation: 4Gb To 3072MB	
DRAM Frequency [Auto]	Auto
Configure DRAM Timing by SPD [Enabled]	Max MHz
Initate Graphic Adapter [IGD]	
Internal Graphics Mode Select [Enable,8MB]	← Select Screen
	↑↓ Select Item
	+ - Charge Field
PEG Port Configuration	F1 General Help
	F10 Save and Exit
▶ Video Function Configuration	ESC Exit

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DRAM Frequency:

[Auto]

[Max MHz]

Configure DRAM Timing By SPD:

[Enabled]

[Disabled]

Initate Graphic Adapter:

Select which graphics controller to use as the primary boot device.

[IGD]

[PCI/IGD]

[PCI/PEG]

[PEG/IGD]

[PCI/PCI]

Internal Graphics Mode Select:
[Enabled, 8MB]

Video Function Configuration:

BIOS SETUP UTILITY		
		Chipset
Video Function Configuration		Options
DVMT Mode Select	[DVMT Mode]	Fixed Mode DVMT Mode
DVMT/FIXED	Memory	
[256MB]		
Boot	Display	Device
[VBIOS-Default]		
Flat	Panel	Type
[1024x768LVDS]		
Panel Backlight Control	[Level 9]	
HDCP Support	Disabled]	
		← Select Screen ↑↓ Select Item +- Charge option F1 General Help F10 Save and Exit ESC Exit
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DVMT Mode Select:
[DVMT Mode]
[FIXED Mode]

DVMT/FIXED Memory Size:
[256MB]
[128MB]
[Maximum DVMT]

Boot Display Device:

[BIOS-Default]

[CRT]

[LVDS]

[CRT+LVDS]

Flat Panel Type:

[1024x 768]

[640x480]

[800x600]

[1280x1024]

[1400x1050]

[1600x1200]

Panel Backlight Control:

[Level9]

[Level0~15]



Note: Panel support PWM Function.

3.8.2 South Bridge Configuration:

BIOS SETUP UTILITY		
		Chipset
South Bridge Chipset Configuration		Options
USB Functions	[6 USB	Disabled
Ports]		2 USB Ports
USB2.0 Controller	[Enabled]	4 USB Ports
82574LAN1	BOOT	6 USB Ports
[Disabled]		8 USB Ports
82574LAN2	BOOT	
[Disabled]		← Select Screen
LAN Wakeup	[Disabled]	↑↓ Select Item
HDA Controller	[Disabled]	+ - Charge Field
SMBUS Controller	[Enabled]	F1 General Help
		F10 Save and Exit
SLP_S4# Min. Assertion Width	[1 to 2	ESC Exit
seconds]		
Restore on AC Power Loss	[Power on]	
PCIE Ports Configuration		

USB Functions:

[6 USB Ports]

[Disabled] ,

[2 USB Ports]

[4 USB Ports]

[6 USB Ports]

USB 2.0 Controller:

[Enabled]

[Disabled]

82574L LAN1 Boot:

[Disabled]

[Enabled]

82574L LAN2 Boot

[Disabled]

[Enabled]

LAN WakeUp:

[Disabled]

[Enabled]

HDA Controller:

[Enabled]

[Disabled]

SMBUS Controller:

[Enabled]

[Disabled]

SLP_S4# Min. Assertion Width:

[1 to 2 Seconds]

[4 to 5 Seconds]

[3 to 4 Seconds]

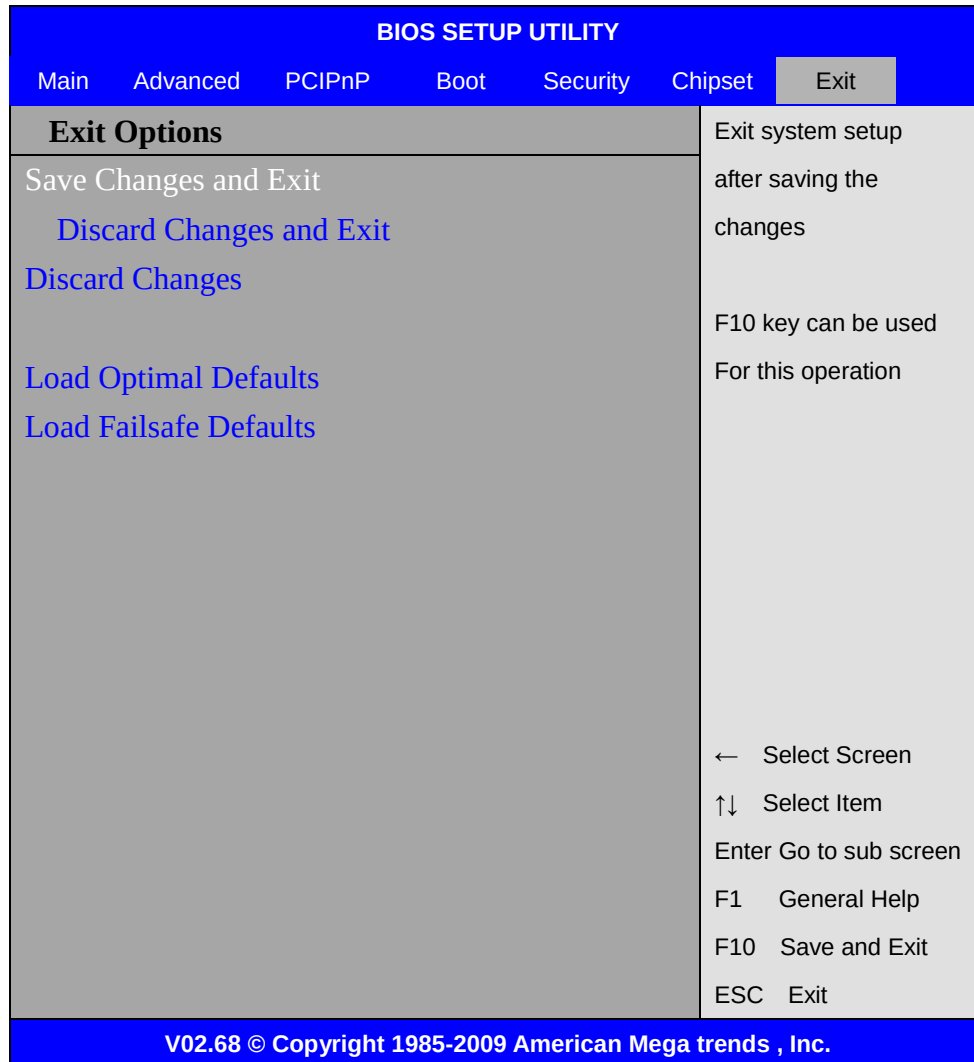
[2 to 3 Seconds]

Restore on AC Power Loss:

[Turn On]

[Power Off]
[Last Status]

3.9 Exit Options



Save Changes and Exit:

Save configuration changes and exit setup?

(F10 key can be used for this operation)

[OK]

[Cancel]

Discard Changes and Exit:

Discard Changes and Exit setup?

(ESC key can be used for this operation)

[OK]

[Cancel]

Discard Changes:

Discard changes?

(F7 key can be used for this operation)

[OK]

[Cancel]

Load Optimized Defaults:

Load Optimized Defaults?

(F9 key can be used for this operation)

[OK]

[Cancel]

Load Fail-Safe Defaults:

Load Fail-Safe Defaults?

(F9 key can be used for this operation)

[OK]

[Cancel]

Chapter 4 Installation of Drivers

This chapter describes the installation procedures for software and drivers under the windows XP. The software and drivers are included with the motherboard. The contents include Intel **chipset driver**, **VGA driver**, **LAN driver**, **Audio driver**. Installation instructions are given below.

Important Note:

After installing your Windows operating system (Windows XP), you must install first the Intel Chipset Software Installation Utility before proceeding with the installation of drivers.



4.1 Intel Chipset Driver

To install the Intel chipset driver, please follow the steps below.

Step 1. Select **Intel(R) Chipset Atom D525 + Intel ICH8M** from the list.



Step 2. Click **Next** to setup program.



Step 3. Read the license agreement. Click **Yes** to accept the terms of the license agreement.



Step 4. Click **Next** to continue.



Step 5. Click Next.



Step 6. Select Yes, I want to restart this computer now. Click **Finish** then remove any installation media from the drives.



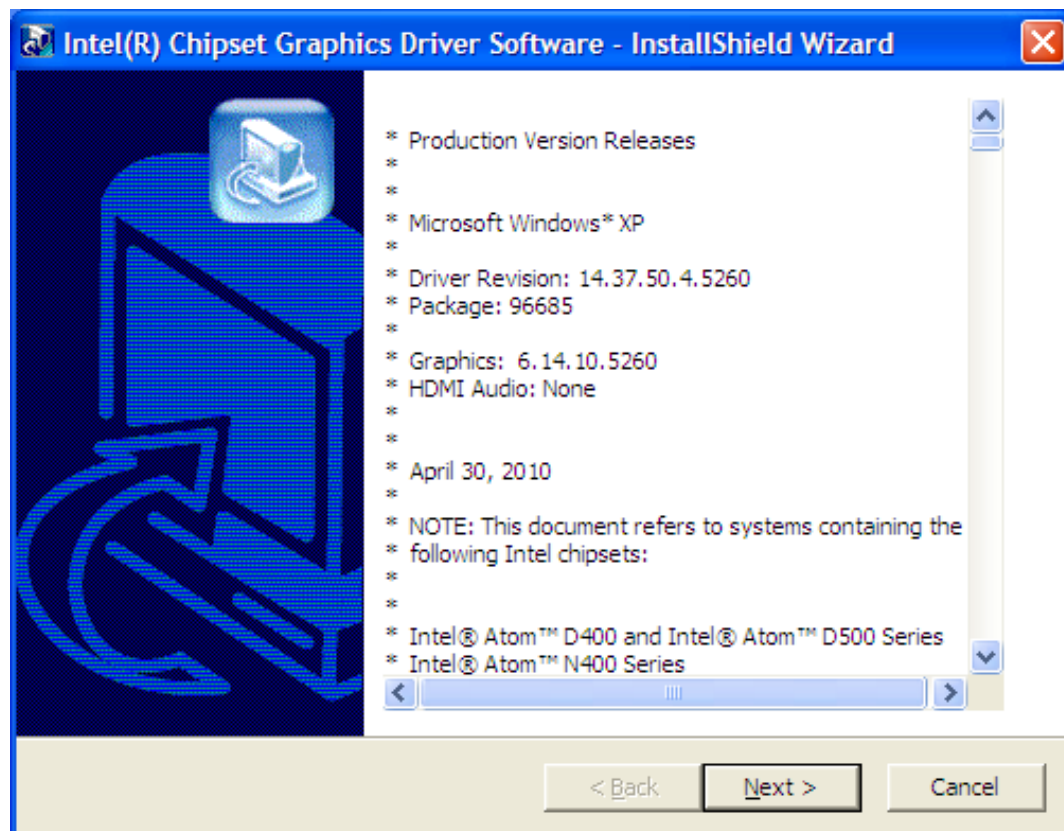
4.2 Intel GMA 3150 VGA Chipset Driver

To install the VGA drivers, follow the steps below to proceed with the installation.

Step 1. Click **Intel GMA 3150 VGA Chipset Driver**.



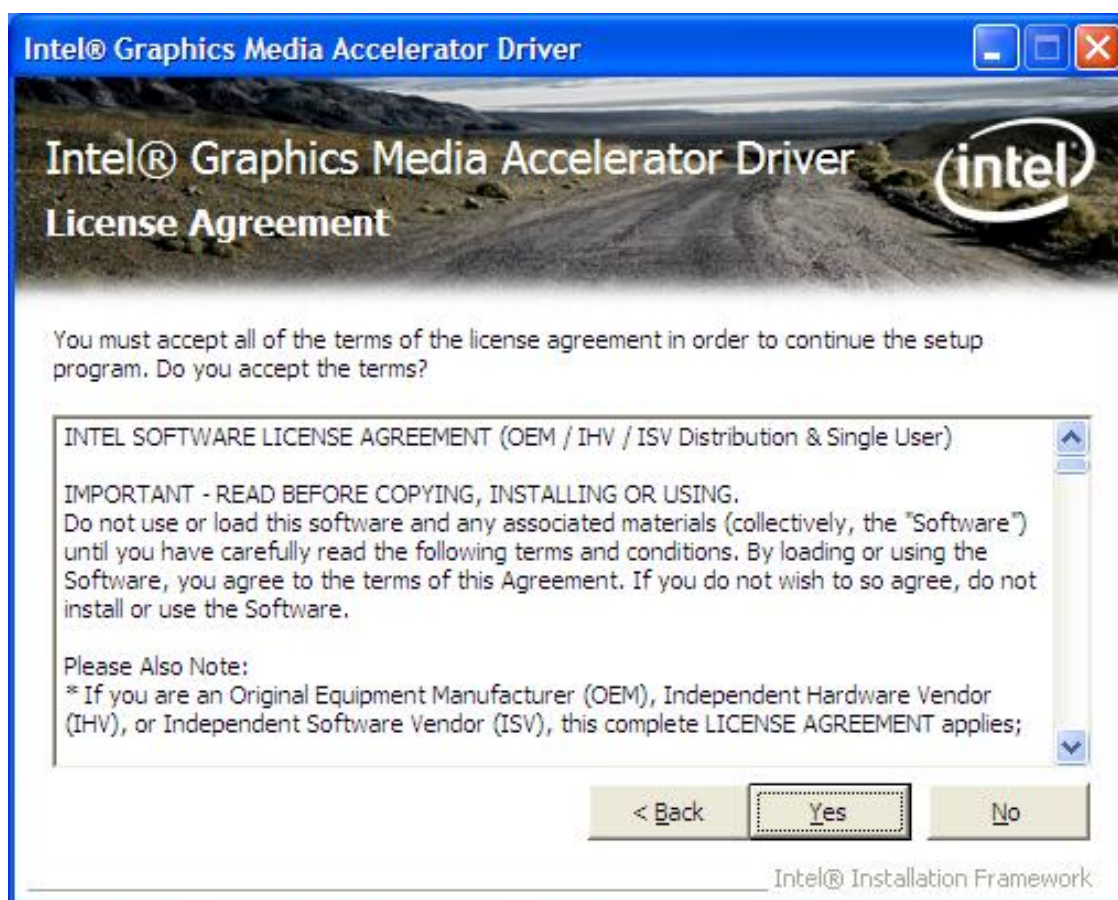
Step 2. Click **Next** to continue.



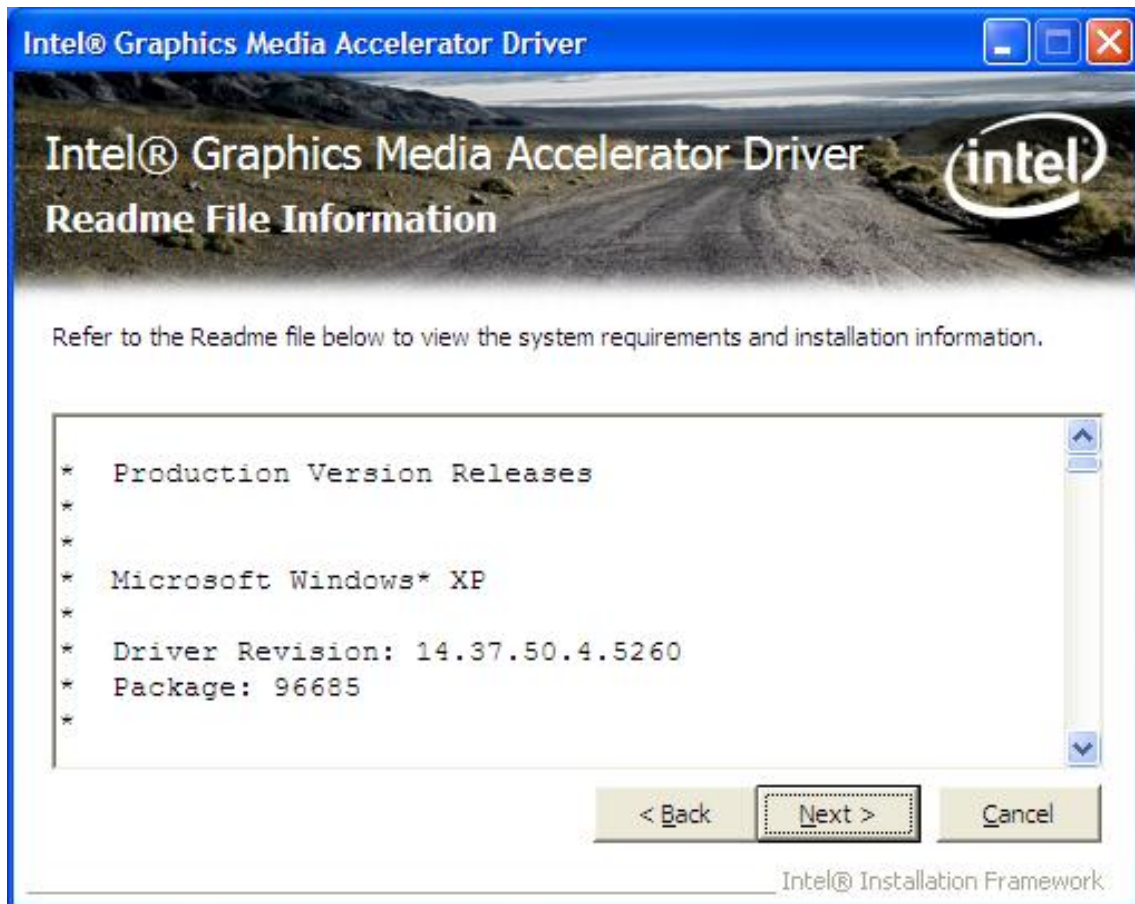
Step 3. Click Next.



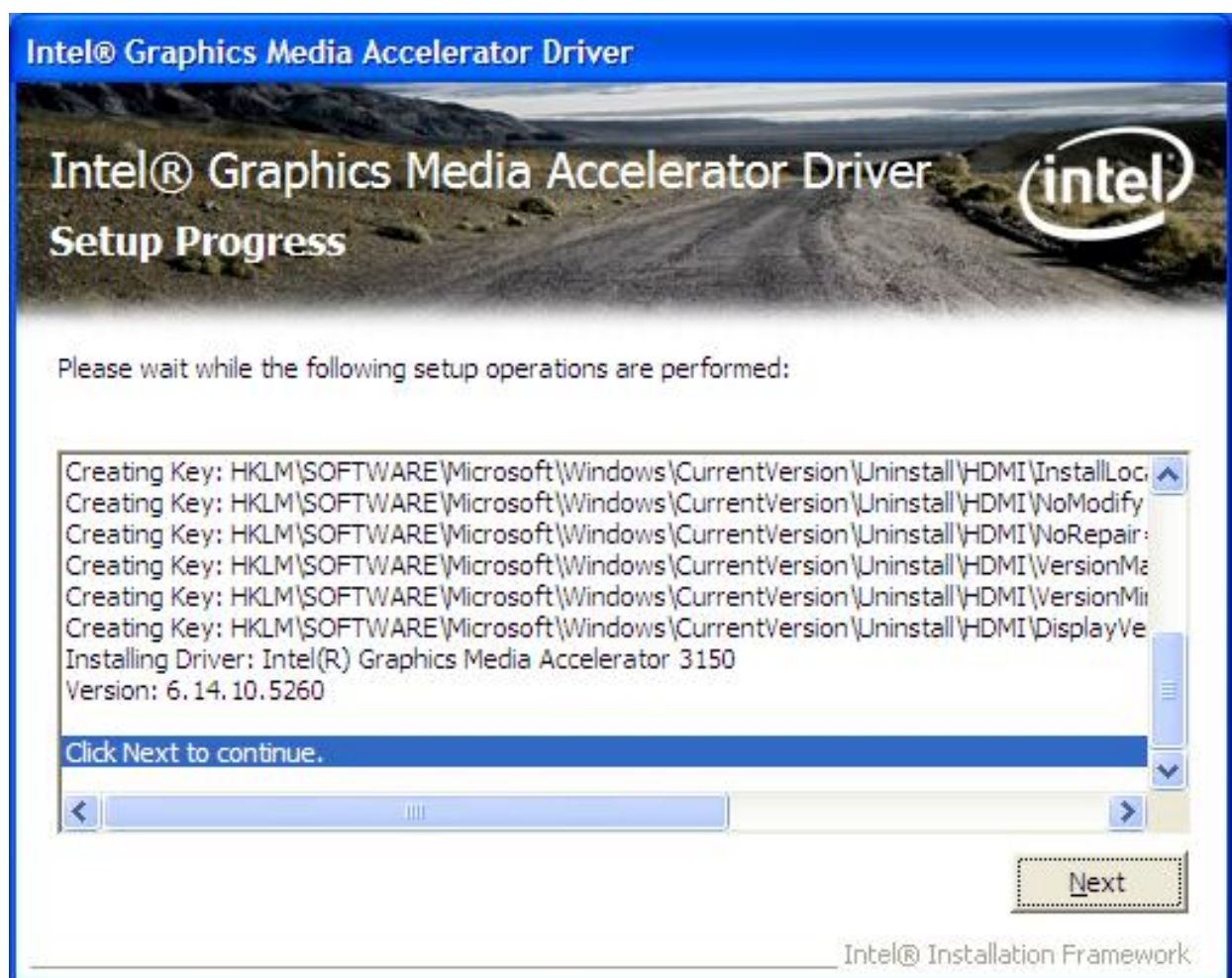
Step 4. Read the license agreement. Click Yes to accept license agreement.



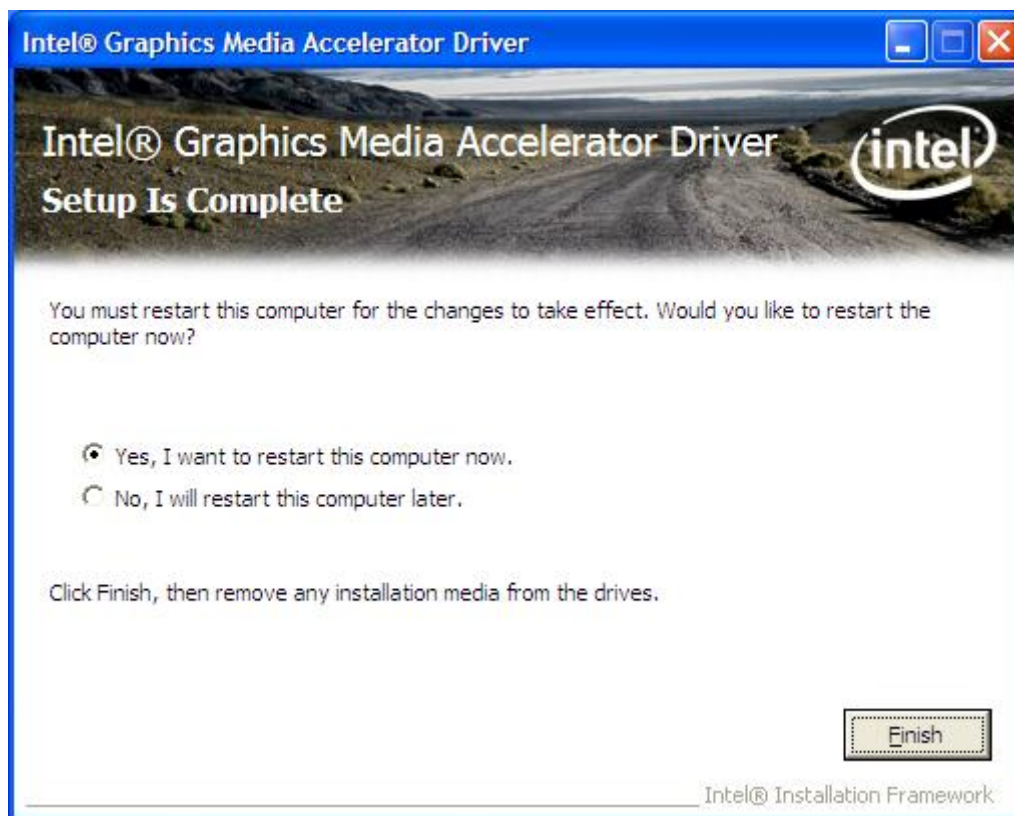
Step 5. Click **Next**.



Step 6. Click **Next** to continue.



Step 7. Select **Yes, I want to restart this computer now.** Click **Finish** then remove any installation media from the drives.



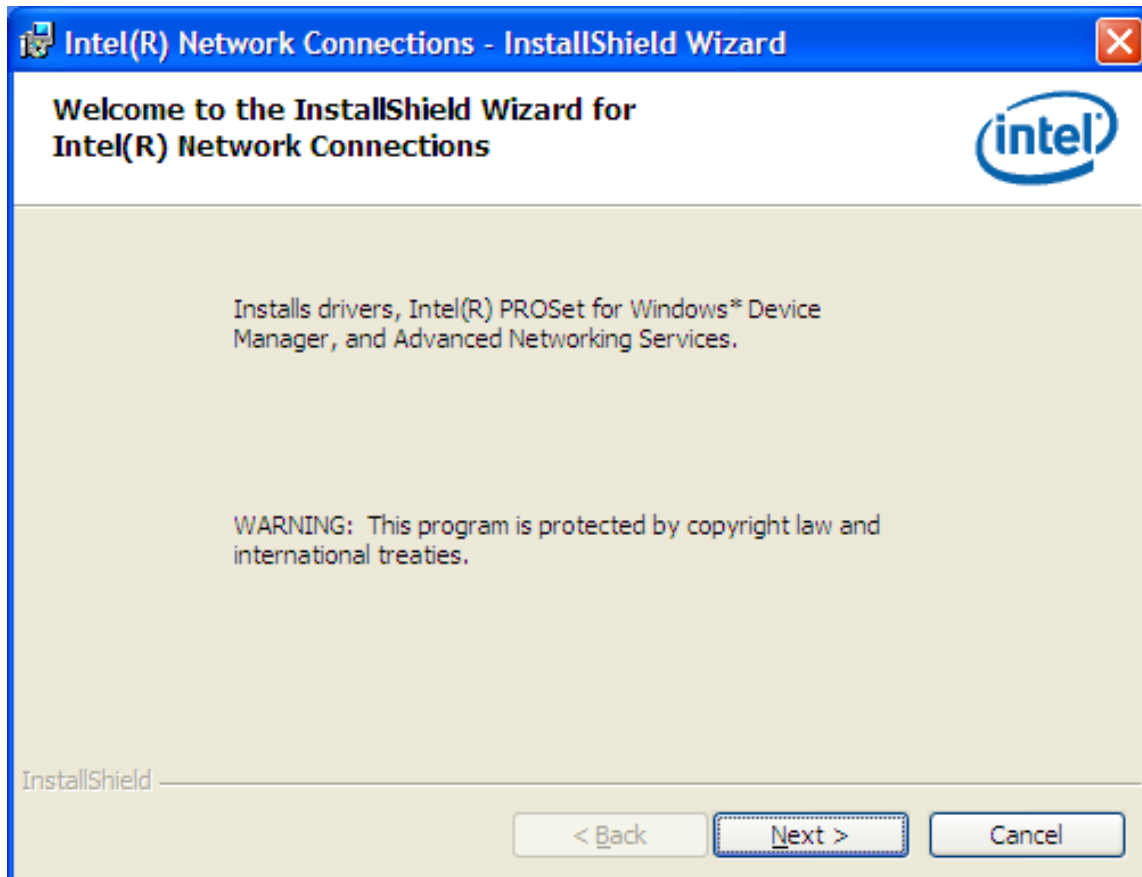
4.3 Intel 82574L Network adapter Driver

To install the Intel 82574L Network adapter Driver, please follow the steps below.

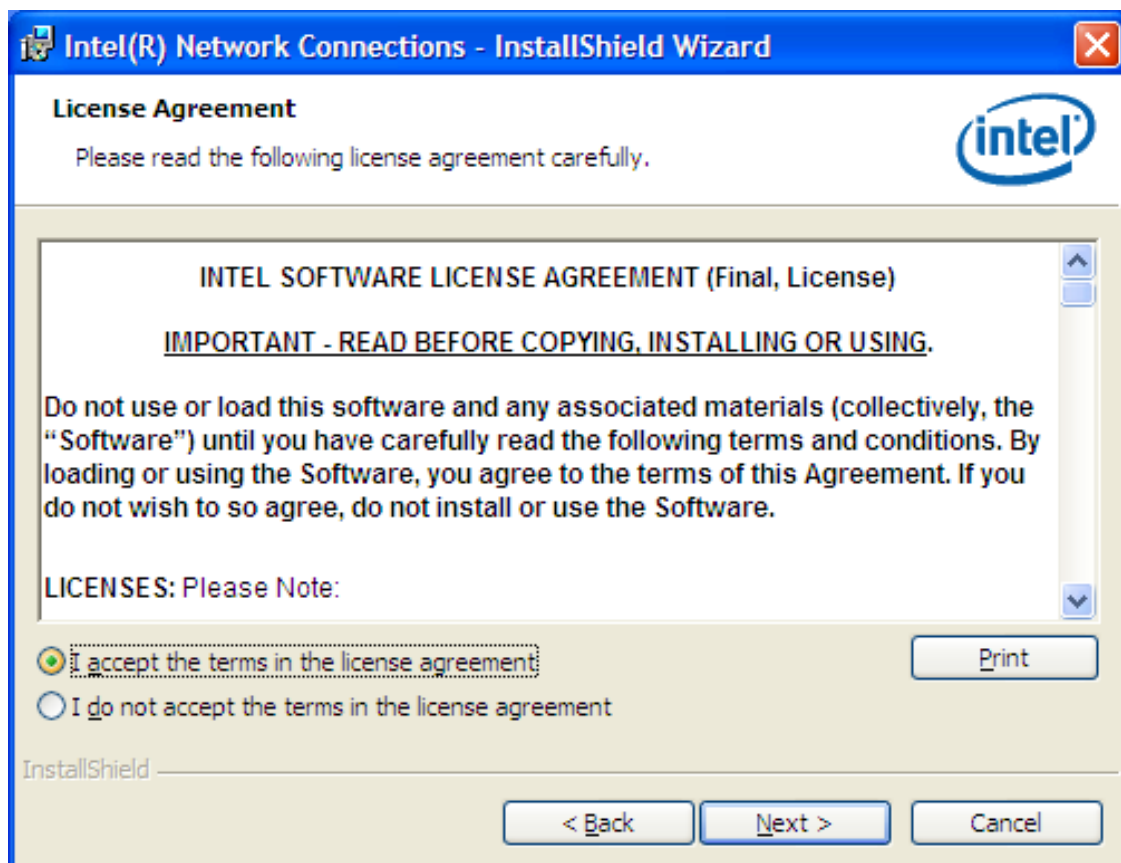
Step 1. Select **Intel(R)82574L Network Adapter** from the list



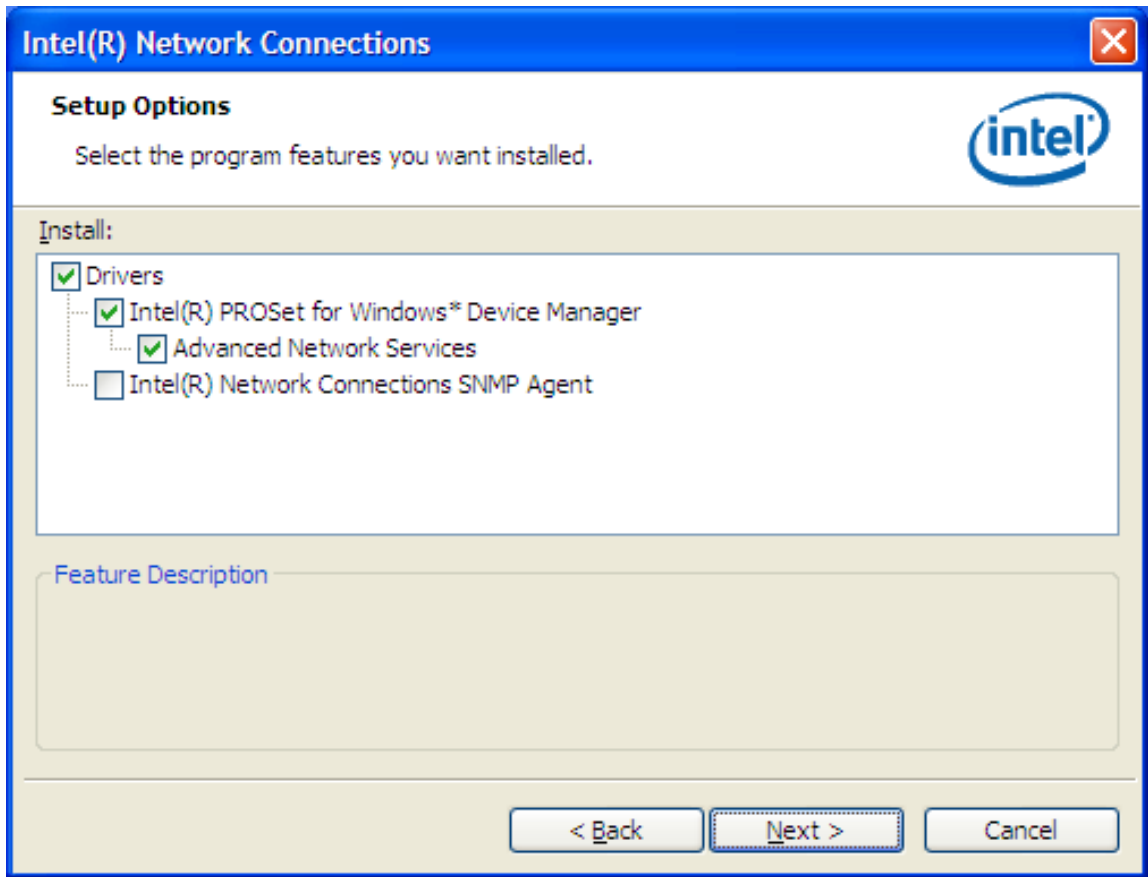
Step 2. Click **Next** to continue.



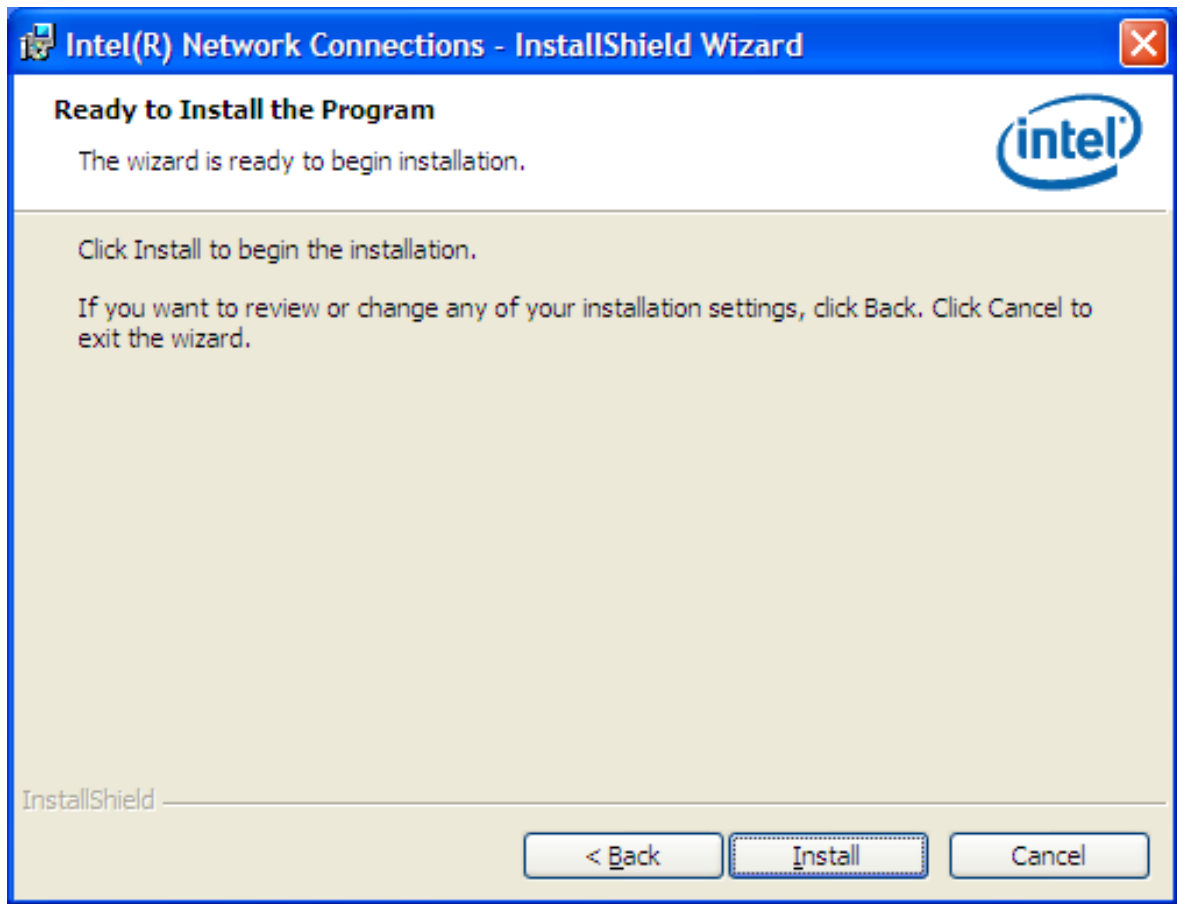
Step 3. Read the license agreement. Select **I accept the terms in the license agreement** then click **Next** to continue.



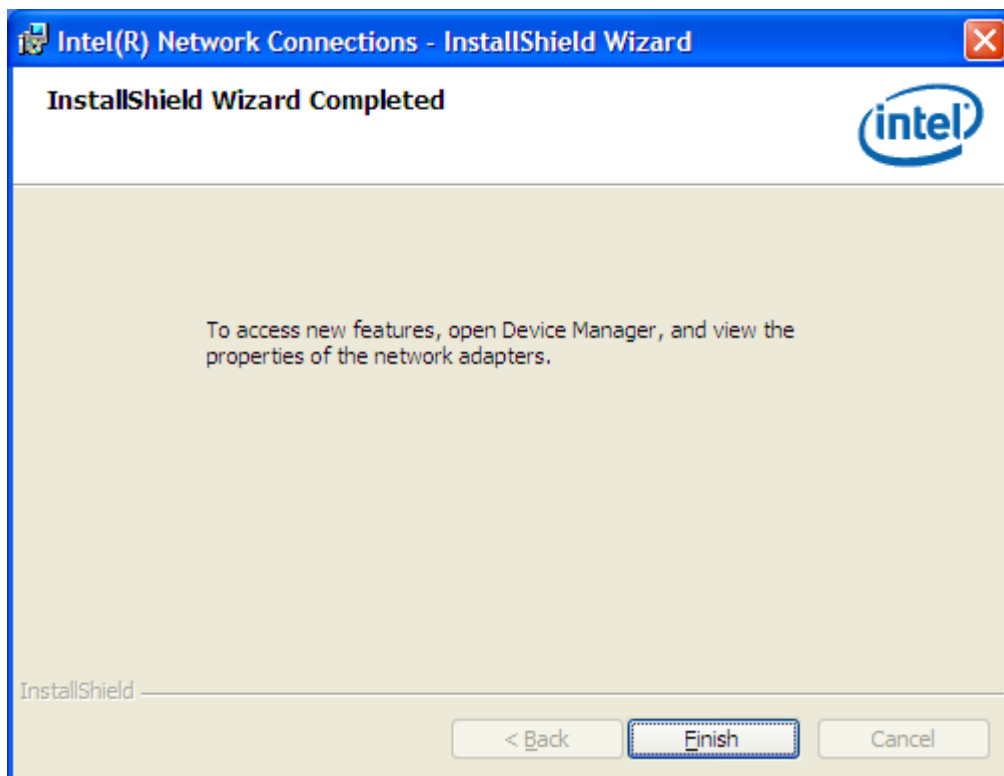
Step 4. Tick **Drivers/Intel(R) PROSet for Windows* Device Manager/Advanced Network Services**. Click **Next** to continue.



Step 5. Click **Install** to begin installation.



Step 6. Click **Finish** to complete the installation.



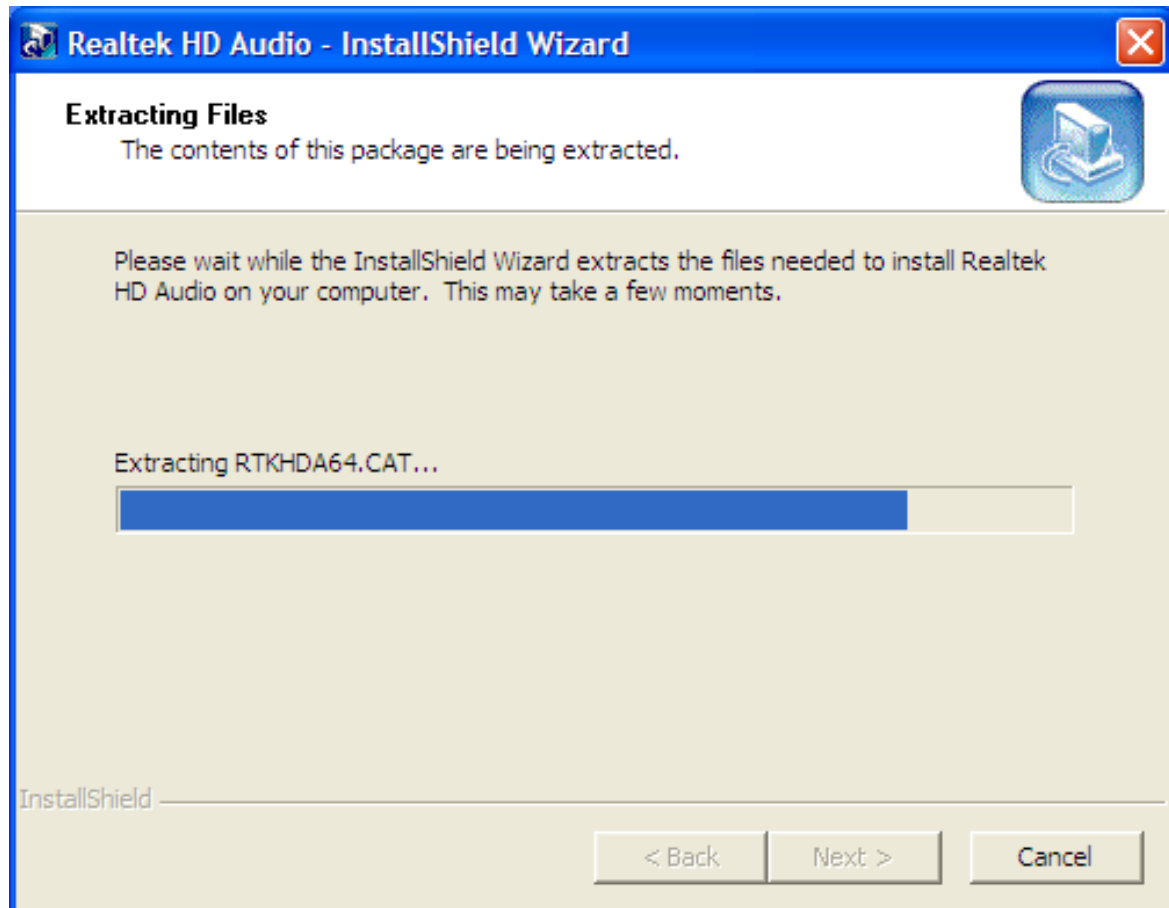
4.4 Realtek HD Audio Driver Installation

To install the Realtek High Definition (HD) Audio driver, please follow the steps below.

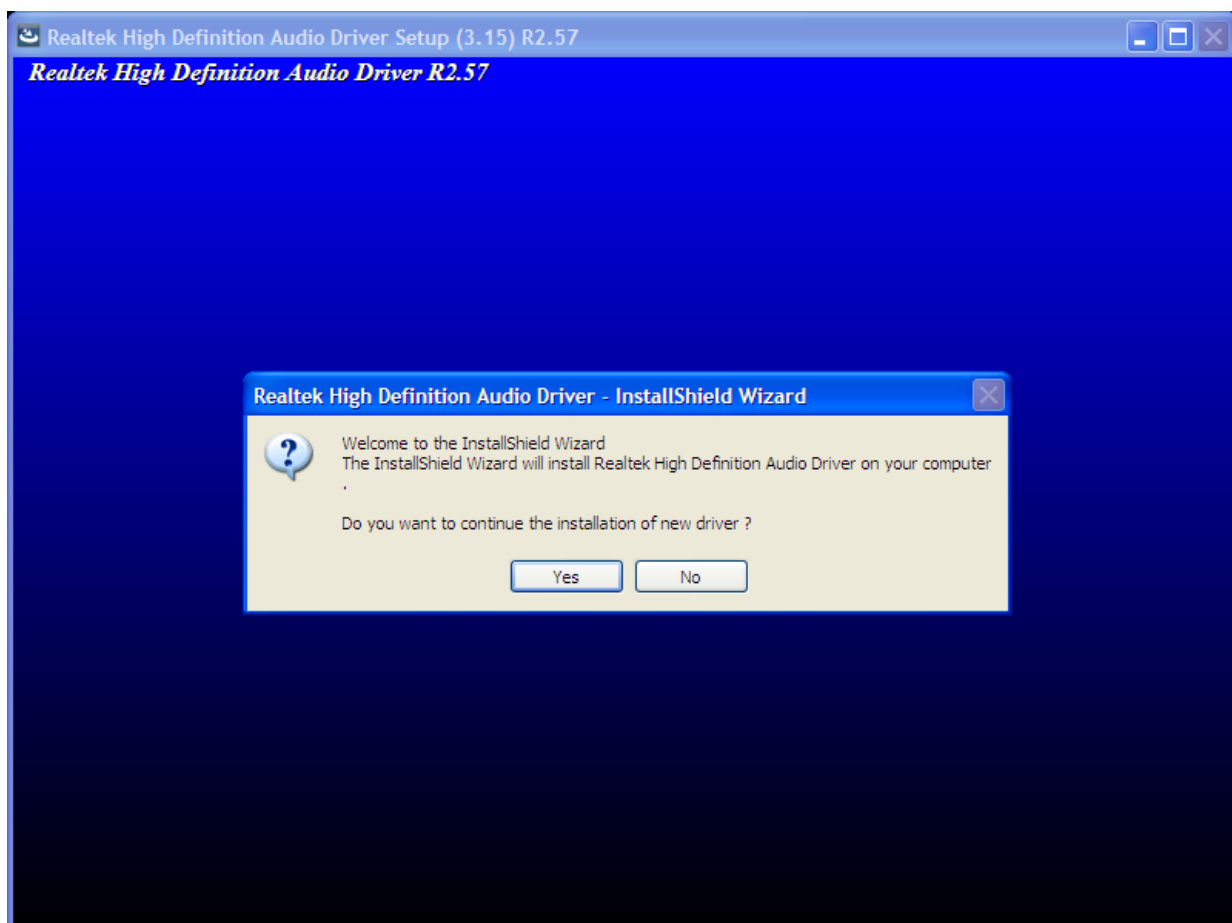
Step 1. Select **Realtek ALC662 HD Audio Driver** from the list



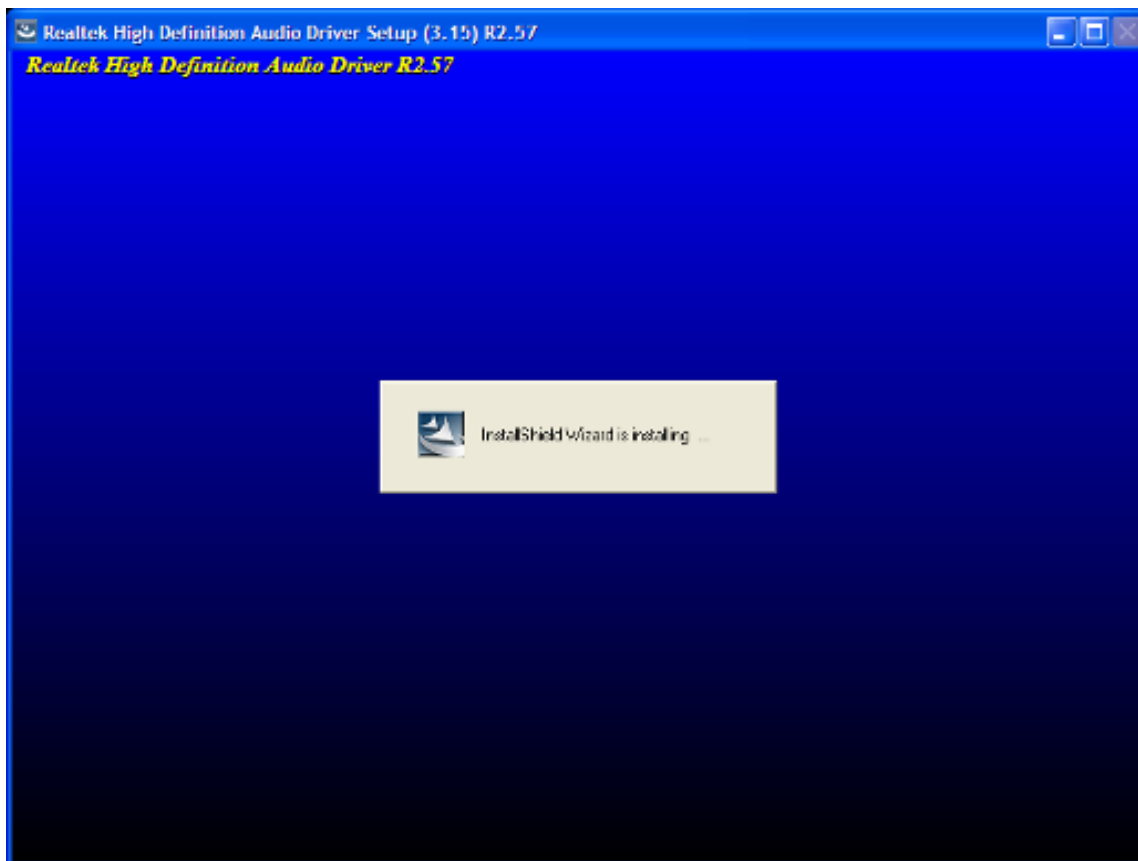
Step 2. Click **Next** to continue the installation.



Step 3. Click **Yes**.



Step 4. Wait for installation.



Step 5. Select **Yes, I want to restart my computer now.** Then click **OK.**

